



MORE JOBS OF THE FUTURE

A GUIDE TO GETTING AND STAYING EMPLOYED THROUGH 2029



Center For
The Future of Work



HUMANS NEEDED

Last year, we proposed 21 jobs that will emerge in the next 10 years and be central to the future of work.

This year, we present 21 *more*. Both reports espouse our argument that even as work is changing with the emergence of AI, humans have never been more integral to the future of work.

Once again, we invite you to ponder 21 jobs that are both plausible and futuristic – and above all represent important work that humans will continue to need to do.

OCTOBER 2018

Introduction

The future of work is at the heart of every major socio-economic-political debate raging around the world today. All of these discussions – be they about walls across borders, migrants landing on the beaches of Southern Europe, surveillance policies in Xinjiang, hard or soft Brexits, taxi services in Paris or the concentration of wealth among the 1% – are rooted in the topic of the nature and distribution of work. From work, and what is derived from it – money – comes power. From its absence stems powerlessness.

This long-evident truth is ever more real in 2018, precisely because people understand that work is changing more quickly than ever before. Given that the stakes are so high, the arguments are more ferocious.

And the number-one reason why work is changing so quickly: the vista of technology opening up before us. A new digital prairie has appeared on the horizon, full of brilliant people solving unimaginably hard problems with brilliant technologies that are getting smarter and smarter, day by day.

Many people are excited and energized by what they see emerging. Others are scared and afraid, frightened that what little grip they had on the economic ladder is about to slip.

THE ROBOTS AREN'T COMING – THEY'RE ALREADY HERE

Who isn't under pressure to outrun the machine? Only the most myopic or insulated (through success or failure) can see that what got them "here" won't get them "there." Everybody has to figure out what to do "when machines do everything."¹ Some will stay and fight; some will run. Some will head for supposedly greener pastures; some will knuckle down. Some will tell the machines what to do; some will be happy to take orders. Some will meekly submit; some will violently rebel.

The prevailing sentiment, though, amid all this uncertainty is that human work is going away; that we're all doomed. Study after study – most famously Oxford University's 2013 report that suggested almost half of U.S. employment is at risk of machine-based replacement² – has laid out a bleak view of a post-work world. To paraphrase an old chestnut, if you're not thoroughly terrified, you're not adequately informed.

It was into these headwinds that in November 2017 we published "[21 Jobs of the Future: A Guide to Getting and Staying Employed in the Next 10 Years](#)."³ In that report, we proposed 21 new jobs that would emerge from a world of AI, automation, algorithms, bots and big data. The jobs ranged from the low-tech and semi-obvious – a *Walker/Talker* – to the very high-tech and hard to fathom – a *Genetic Diversity Officer*. The jobs we described emerged from studying and analyzing economic, political, demographic, societal, cultural, business and technology trends, and then drawing implications from them.

Most importantly, last year's report was based on our view that, as we noted:

In the future, work will change but won't go away. Many types of job will disappear. Many workers will struggle to adjust to the disappearance of the work they understand and find it hard to thrive with work they don't understand. Wrenching transformations – which is what the future of work holds for us all – are never easy. But a world without work is a fantasy that is no closer to reality in 2017 than it was 501 years ago upon the publication of Thomas More's Utopia.

THREE THEMES UNDERLYING THE NEW JOBS

Last year's jobs fell into a pattern that we called the *Three C's*: coaching, caring and connecting. This reflected, as we put it, a widely held feeling that no matter how technological our age becomes, ultimately we, as humans, want the *human touch*. This year's jobs convey a different set of themes, but ones again born from our deep-seated aspirations for the future:

- **Ethical behaviors:** We want machines – and humankind – to act well and behave themselves; our jobs include a *Chief Purpose Planner*, an *Algorithm Bias Auditor*, a *Juvenile Cyber Crime Rehabilitation Counselor*, a *Head of Machine Personality Design* and a *Head of Business Behavior*.
- **Security and safety:** We want to feel safe in this brave (and scary) new world we're creating; this will call for jobs such as *Cyber Attack Agent*, *Cyber Calamity Forecaster*, *Machine Risk Officer* and *Virtual Identity Defender*.
- **Dreams:** A number of our new jobs stem from age-old science fiction visions that are set to become science fact in the next 10 years: *Smart Home Designer*, *Flying Car Developer*, *Vertical Farm Consultant*. In times that are undeniably cloudy (if not entirely dark), and in which the downsides of technology are more visible than ever, these types of jobs derive from our desire to continue believing in the positive power of technological-driven progress. We still want to live in Orbit City.⁵

Although this report focuses on jobs rather than the underlying skills that make up a job, it's worth considering the changing nature of skill in an era when the substitution of human skill with machine execution will be a central planning assumption for the future. Each of the jobs in our report is emerging at a time when the commercial value of human skills is being radically, and even brutally, reassessed. Some old skills are losing their power in the market, while many new skills are the source of outsized advantage.

But paradoxically, some old skills are more important than ever. And not all new skills will have a long shelf life. In considering the new jobs presented here, we've been conscious of what might be regarded as "the Four E's of Skills" that will determine their continued existence: their degree of being eternal, enduring, emerging and eroding (see sidebar, page 39).

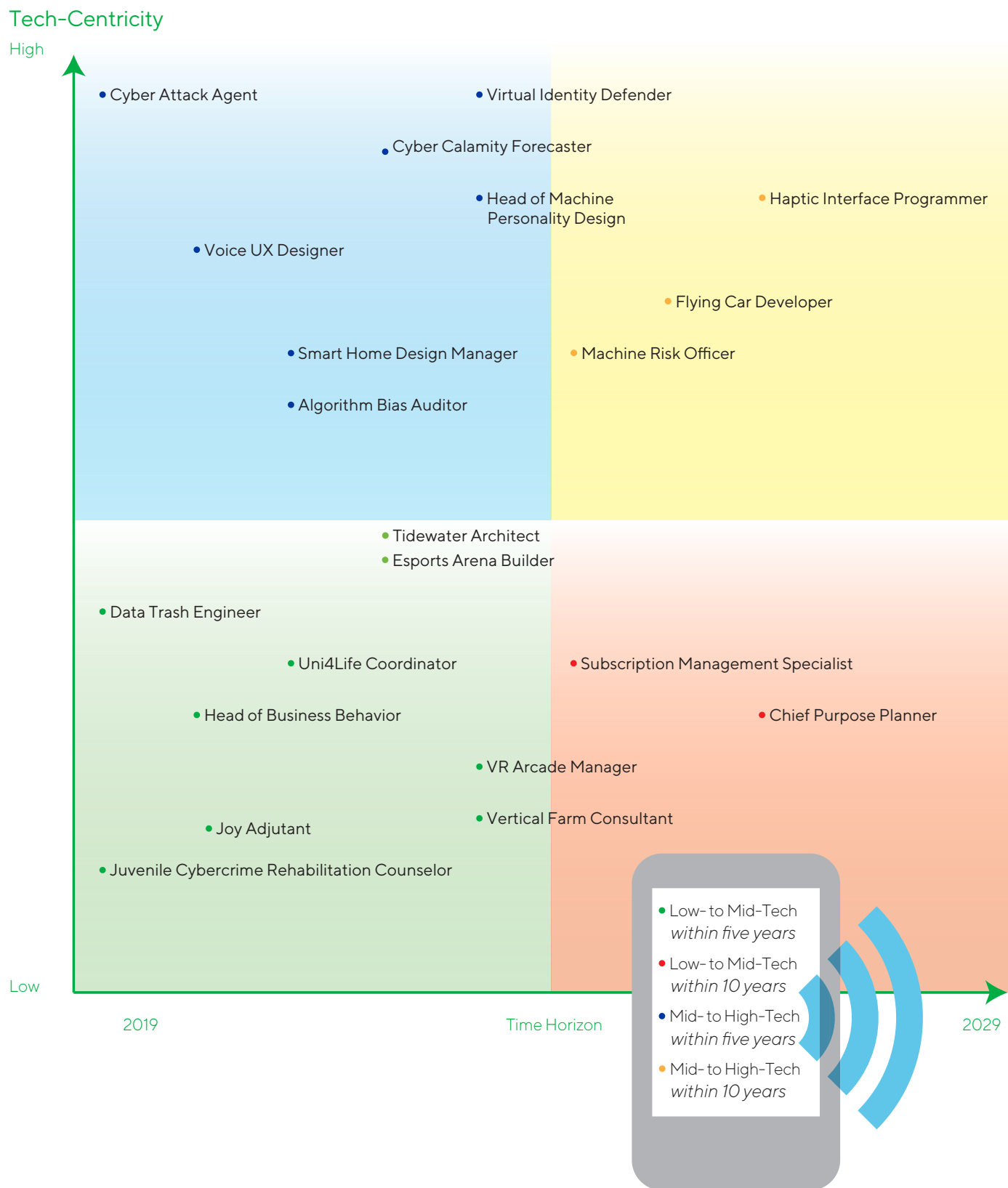
JOBS THAT ARE FUTURISTIC, PLAUSIBLE AND IMPORTANT

Our overriding intention with both last year's report and this latest version is to make the argument that there is a future of human work. In sum, we've now presented 42 jobs of the future. We could keep going, and in years to come, hopefully will. In conjunction with this year's report, we've also created the Cognizant Jobs of the Future (CJoF) Index that on a quarterly basis will quantify the scale and velocity of emerging new types of work. More details about the CJoF Index can be found at <https://cogniz.at/jobsindex>.

Our belief is that the jobs we've outlined mix the futuristic with the plausible (in a way that many white papers and books about the future don't); all of them require important work that humans will continue to need to do.

As with last year's report, we invite you to read about and ponder the jobs that will be central to the future. We said last year that "you never know, one day, you might be doing one of them" – and for some people that has turned out to be true. Again, the jobs we feature this year may be the future of *your* work.

21 More Jobs: The Road to 2029





21 MORE JOBS

We present our 21 jobs of the future in the order in which we expect them to appear. Each job is displayed in the form of a job description, similar to those your HR organization will soon need to write. We've also color-coded all the jobs to reflect their level of tech-centricity.

LOW- TO MID-
TECH

Data Trash Engineer

POSITION SUMMARY

The theory behind junk data is often wrong, and we need to fix it. Data that has not been used by anyone in the past 12 months, has no foreseeable use as initially imagined, and isn't necessary for regulatory purposes, can still be turned into insights. Just like food waste is a carbon that can be used to produce green energy, data waste is still meaningful if cleaned.

We're seeking data trash engineers who can identify unused data in our organization, clean that data and feed it into machine-learning algorithms to find hidden insights by not only increasing how much data is collected, but also improving the data quality.

In the end, the goal of the data trash engineer is to transform data from trash to treasure. The possibilities are endless, and we expect the employee in this role to originate award-winning ideas.

OVERALL REQUIREMENTS

In today's business world, we often struggle to manage the ever-expanding volume of data around us, while also ensuring the quality of that data. As a result, we often end up labeling piles of data as waste if it hasn't been used in the last 12 months. However, if we mine, refine and distribute it, data trash can be profitable, and the return on investment can be significant.

As a key member of a fast-paced, high-performing and highly-visible data analytics team, the data trash engineer will have the opportunity to use quantitative skills and develop well-rounded business insights by working across various functions on impactful, business-focused projects.



In this role, you'll apply analytical rigor and statistical methods to data trash in order to guide decision-making, product development and strategic initiatives. This will be done by creating a "data trash nutrition labeling" system that will rate the quality of waste datasets and manage the "data-growth-data-trash" ratio.

For instance, if we're expecting 30% annual growth in data over the next 12 months, the data trash engineer will ensure 30% of the data labeled as trash is cleaned and translated into key business decisions. In the end, this role will help us fix the data trash problem by establishing a "trash-to-treasure" data supply chain.

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SPECIFIC RESPONSIBILITIES

- Create a data trash nutrition labeling system to rate the quality of each dataset. Perform end-to-end analyses that include business requirement specifications, data cleaning, analyzing, modeling, validating and facilitating gradual improvements.
- Become a champion of the “trash-to-treasure” innovation program by helping business teams find new opportunities, enhance customer interactions and uncover new business models. Review, analyze and share results to guide improvements, decision-making and program optimizations.
- Design AI test experiments that focus on enhancing customer experiences of our offerings, services and programs, as well as offer consultation and closely monitor experiment execution. The data trash engineer will ensure an uninterrupted supply of clean data is available for AI technologies to deliver the required results.
- Participate in the planning and strategy of key business projects by making business recommendations with effective presentations at multiple levels of stakeholders through visually compelling analytical results from the trash-to-treasure program.
- Drive collaboration and partnership with other data teams to ensure customer success.
- Partner closely with our legal teams to ensure we’re treating all customer data to comply with appropriate confidentiality and usage.

SKILLS & QUALIFICATIONS

- A master’s degree in a quantitative discipline (e.g., statistics, computer science, quantitative psychology, applied mathematics).
- Three to five years of experience with various data analysis tools, data mining tools and statistical packages.
- Experience working on big data and machine learning technologies, such as Azure Cosmos DB, TLC, Azure ML, Cortana Analytics, R, Python and SQL.
- Proficiency with analytical tools (R, SAS, Matlab, Python or Stata).
- Development experience in at least one scripting language, such as Python, Java, C, C++, Ruby or Perl.
- Solid interpersonal, cross-organizational collaboration capabilities, as well as written, verbal and visual communication skills to present complex analytical results concisely and effectively.
- Experience developing data visualization offerings and dashboards.

MID- TO HIGH-
TECH

Cyber Attack Agent

POSITION SUMMARY

In the Fourth Industrial Revolution, physical battlefields will increasingly become redundant. So will this spell the end of warfare? Unfortunately not, but the wars of our imminent future will increasingly be fought on and through virtual as opposed to physical environments. We've already seen examples of these cyber broadsides in Ukraine's 2015 power outage and the 2016 U.S. Presidential election.

As such, the National Cyber Security Center (NCSC) is seeking a new type of cyber agent, one that not only can defend our national infrastructure but also, if necessary, undertake an offensive against our nation's adversaries.

OVERALL REQUIREMENTS

As a cyber attack agent, you'll form part of a new Special Operations division within the NCSC, tasked with developing, undertaking and leading the nation's cyber deterrent program. As a key member of this team, you will assist in developing, and in wartime delivering, strategic cyber offenses against adversaries' infrastructure and public and private sector systems.

To be considered for this critical role, you must display an excellent track record of cyber hacking, "grey-hat-focused" software development or distributed denial of service attack experience. Cyber attack agents will need to operate as an effective and highly nimble team, collaborating closely with each other, as well as with the NCSC's cybersecurity teams.



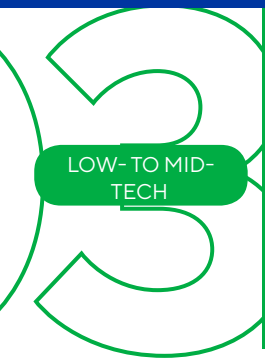
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SPECIFIC RESPONSIBILITIES

- Map out critical infrastructure targets in adversarial states.
- Strategize on the most expedient and effective means with which to target adversaries’ infrastructure and systems.
- Stay one step ahead of next-generation cyber offense strategies and software.
- Collaborate closely with cross-functional teams in the NCSC.
- Provide wing-to-wing project lifecycle execution (project planning, execution, risk assessment and system availability).
- Manage and develop the exploitation of open and closed intelligence sources.
- Undertake immediate offensive action against our nation’s adversaries in the event of conflict.
- Follow orders in a punctual and accurate manner.

SKILLS & QUALIFICATIONS

- Five years or more of experience in cyber infiltration work.
- Proven ability to maintain continued personal or professional development within the cyber and digital arena.
- Excellent communication skills, both verbal and written, with the ability to produce documents with a high standard of accuracy and strong attention to detail.
- Experience in computer programming across Hadoop and Python.
- Relevant security clearance.
- Demonstrated knowledge of the UK National Intelligence Model (NIM).
- Extremely high attention to detail.



Juvenile Cybercrime Rehabilitation Counselor

POSITION SUMMARY

Our digitally-enabled youth are faced with different temptations from those of previous generations. No longer is a pull on a cigarette or a swig of beer our childrens' greatest temptation, although these have by no means disappeared. Today, cybercrime is the new allure for digitally-savvy youth. The enticement of easy money and the apparent victimless nature of cybercrime are attracting an increasing number of young people to engage in digital misdeeds.

The National Center for Ethical Online Behavior is seeking counselors to work in schools and specialized centers to rehabilitate school-age convicted cyber criminals and help redirect their online talents to ethical endeavors.

OVERALL REQUIREMENTS

As a juvenile cybercrime rehabilitation counselor, you will work independently and in small teams across the country. In this role, you will work closely with young cyber offenders to rehabilitate and introduce them to ethical cyber use. Counselors will also work with these young offenders to first understand their cyber talents and then direct them toward digital roles that will make the most of their skills.

Applicants will be considered from either counseling, mentorship and school guidance backgrounds, or with previous experience in IT development and cybersecurity. Successful applicants will undertake an initial training and qualification exam before beginning their role.

Ideal candidates are energetic, inspiring and understanding individuals who will help rehabilitate and foster the development of our future cyber talent.

SPECIFIC RESPONSIBILITIES

- Counsel and supervise juvenile cyber criminals (clients) on how to best utilize their digital talents in a legal and responsible manner.
- Act as a nonjudgmental confidant for clients.
- Teach clients to recognize the potential implications and dangers of their cybercrime activities.
- Develop individualized rehabilitation plans for each client, including work placements in reputable organizations, daily diary activities, ongoing counseling sessions and one-on-one sessions with convicted cyber criminals.
- Mediate between private and/or public organizations on clients' behalf to secure intern positions.
- Collaborate with other professionals – teachers, parole officers, lawyers – to help assess client needs and state of mind.
- Create and maintain in-depth reports on individual client progress.
- Build and maintain close and professional relationships with clients.
- Provide accurate and timely references for clients' future employment opportunities.

SKILLS & QUALIFICATIONS

- University qualification in an IT- or psychology-related field.
- Demonstrated experience working with young people.
- In-depth knowledge of cybercrime, with a working knowledge of the legalities surrounding the subject.
- Excellent communication skills, both verbal and written.
- Valid driver's license, with a clean driving record.



In this role, you will work closely with young cyber offenders to rehabilitate and introduce them to ethical cyber use. Counselors will also work with these young offenders to first understand their cyber talents and then direct them toward digital roles that will make the most of their skills.

MID- TO HIGH-
TECH

Voice UX Designer

POSITION SUMMARY

Voice is the new frontier of computing for the 2020s. However, a generation of us has only known a “Siri Voice” and an “Alexa Voice.” While serviceable, these lack the real color and creativity of our conversations with humans. Given the seven billion people on the planet, AI voice platforms are transposable to each and every one of us, with an “optimal” dialect and sound that is most pleasing to each of us. That’s where the voice UX designer comes in.

If you thought your linguistics degree was useless in the age of Google Translate, think again. Most companies are now aggressively investing in ways to leverage voice as a platform as the next frontier for their digital customer engagement strategies. Studies show the more that a voice interface can reflect a person’s dialect and unique speech traits, the more effective it is. Beyond amplifying customer engagement (and lowering customer acquisition costs), voice design will also improve task completion, and optimize work with virtual assistants for next-best actions and pattern matching.

OVERALL REQUIREMENTS

As a voice UX designer, you’ll create a set of diagnostic tools, algorithms, linguistic imprint protocols and refinement regimens to help individuals carefully curate their “perfect voice” assistant using our patented VoiceBox AI app. Just as everyone’s social media page or avatar is unique to them, VoiceBox will capture, imprint, dynamically optimize and promulgate highly personalized voice assistants for every customer that uses it.

Ideal candidates will be passionate about advancing human-digital “conversation” strategies. The critical requirement for the voice UX designer is to hone the accents, inflections, turns-of-phrase, jargon and lingo of current voice-as-a-platform systems to become uniquely individualized to craft the voice that’s most engaging, pleasant, conversational, comfortable and understandable to (and understanding of) each person’s individual tastes.

As a voice UX designer, you'll create a set of diagnostic tools, algorithms, linguistic imprint protocols and refinement regimens to help individuals carefully curate their "perfect voice" assistant using our patented VoiceBox AI app.

SPECIFIC RESPONSIBILITIES

- Work with our teams of humanistic anthropologists to observe, document and predict the unique conversational habits, styles and needs of your linguistic community.
- Utilize the latest research on user interactions to script colloquial banter to maximize user engagement, goals, wants and needs (e.g., making a call, purchases, getting estimates, etc.).
- Work with chatbot copywriters to anticipate tactical, flexible "if/then" conversational branch logic/trees (similar to flows for AR journey builders); use real-time A/B tests to verify quality.
- Work with chatbot copywriters to develop strategic personae applicable to your linguistic community to heighten engagement.
- Leverage our Voicebox AI software to map or overlay culturally appropriate visual GIFs, emojis and memes into text-based chatbot or AR flows/trees/cues that augment your voice-only creativity.

SKILLS & QUALIFICATIONS

- A bachelor's degree in English or linguistics or equivalent university-level language credentialing.
- A background in B2B UX design, augmented reality journey building flows, creative writing or social media conversations (applicants with demonstrated experience as "improv" actors or audiobook actors a plus).
- Skilled in visualizing and improving conversational flow (i.e., not stilted "if/then" scripts but natural conversational flows for given languages or dialects).
- Deep understanding of and cultural attunement to languages or dialects that can scale to create a more natural conversation for a substantial population of our user base.
- Ability to apply natural conversational subtleties and nuances, and talent in developing bot "personality" and "humor."



LOW- TO MID-
TECH

Joy Adjutant

POSITION SUMMARY

At a time when people are saddled with an abundance of more things and “stuff” in their lives, why does it seem like there’s less joy? In conjunction with other miniaturization trends, more people are realizing that – whether it’s minimalist design, the #Tiny Homes movement or the clean and uncluttered drumming of Stewart Copeland – a less-is-more approach often yields greater life satisfaction.

This concept is a core tenet of Marie Kondo’s 2015 mega-hit, *The Life-Changing Magic of Tidying Up*. And like Hoover did for vacuums, or Lord Sandwich did for finger foods, the precepts of Kondo have taken on an eponymous life of their own as a guide for people who are figuratively drowning in “stuff.”

We’re looking for tens of thousands of qualified individuals (some of whom are already Kondo Consultants – credentialed KonMari Method disciples of Ms. Kondo herself) who are immersed in the precepts of “the Japanese art of decluttering and organizing” to form a veritable army of joy adjutants. The mission is to help individuals find joy in their relationships with everyday objects in their household.

OVERALL REQUIREMENTS

Using our JOOYS platform (“Just Organize & Offload Your Stuff”), the role of joy adjutant will help clients arrive at “joyful-or-not?” decisions via sleek, touchscreen feedback. JOOYS is an easy and highly scalable AI platform that distills the degree to which clients find meaning in their objects (yielding efficient answers to essential questions like “Can you *definitely* throw this item away? Might you *maybe* be able to throw it away? Can you certainly *not* throw it away?”), so that joyful improvements can be made immediately.

As a joy adjutant, your humanness, counseling and intervention will work in concert with the JOOYS platform to help customers break the inertia of where to begin by sequentially sorting clothes, papers, miscellany and – finally – sentimental items. Our engagement models are based on a lucrative per-contract basis, with significant upside for your clients (and a commission for you) by selling joyless, unwanted items exclusively through the consignment sales functionality of the JOOYS platform.

The ideal candidate will enjoy helping clients make good decisions about objects that bring happiness to their lives: “You won’t be unemployed if you find pleasure in other people’s joy.”

SPECIFIC RESPONSIBILITIES

- Help clients visualize life with a clutter-free space and what it means to them.
- Help clients identify how their physical objects make them feel, and which of them “spark joy.”
- Provide advice and counsel – and often, counseling – to ensure appropriate disposition of all items.
- Facilitate the use of the JOOYS platform to catalog, assess, keep, place or dispose of every item.
- Support client adherence through regular followups/check-ins to manage and maintain, and to foster additional opportunities for consultancy via clients’ friends, family and networks.

SKILLS & QUALIFICATIONS

- Consulting/coaching experience and expertise, coupled with a good sense of aesthetics and active listening.
- Strong relationship management skills, including the ability to understand motivations, navigate different personality types, listen and ask the right questions.
- Engaging and understanding personality – yet able to provide “tough love” when need be.
- Comfortable with new augmented reality, virtual reality and artificial intelligence technologies at the heart of the JOOYS platform.
- Experience and/or qualifications in interior design, cataloging and/or aesthetics. Certification in *feng shui* or *hygge* a plus.

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LOW- TO MID-
TECH

Head of Business Behavior

POSITION SUMMARY

Understanding employee behavior is a challenging and complex landscape, made easier by the widespread adoption of sensors and biometric technology in the workplace. We've been collating behavioral data from a plethora of sources for a number of years, including performance data, emotional data and interaction data through personal, environmental and spatial sensors, as well as cutting-edge biometric technology.

Now we're looking for an ambitious and inspiring individual to establish our organization as a frontrunner in behavioral data usage while maintaining the trust, satisfaction and motivation of our workforce. The head of business behavior will be responsible for analyzing employee behavioral data and driving strategies to improve employee engagement, productivity and well-being.

OVERALL REQUIREMENTS

As the head of business behavior, you'll be a leader within the workforce intelligence team, responsible for developing data-driven strategies in areas such as:

- **Employee experience:** How can we continue to hyper-personalize employee experience? What time of day are people most engaged with work, and how do we accommodate this? What's the impact of an excellent employee experience on company performance?
- **Cross-company collaboration:** How do our people interact today? How do they feel about working with people from different geographies, business units and backgrounds? How can we improve cross-company collaboration? What is the formula for a successful team?
- **Smart workplace success:** How does office space impact the way people work? How does it impact their attitude toward work?
- **Employee satisfaction:** How do people feel about coming to work? How does this impact their attitude toward work? What is it about working here that makes people stay? What is it about working here that makes people go?

Although the use of personal data is more widely accepted today than 10 years ago, the head of business behavior will remain cognizant of the privacy and ethical concerns surrounding the collection of behavioral data. Preserving our employees' trust and engagement with our data-driven culture is vital.

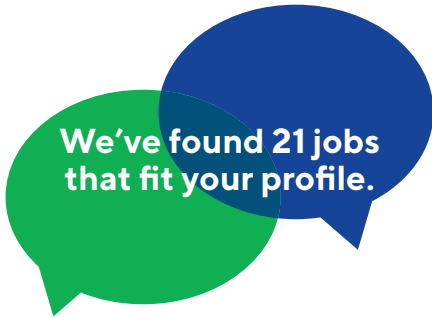
We're looking for an ambitious and inspiring individual to establish our organization as a frontrunner in behavioral data usage while maintaining the trust, satisfaction and motivation of our workforce.

SPECIFIC RESPONSIBILITIES

- Analyze behavioral data sets to uncover hidden insights into what makes our workers tick.
- Bring insight from the fields of psychology and anthropology to cross-examine data and reinforce data-driven insights, keeping the human at the heart of what we do.
- Be transparent and approachable at all times so you're the first to know how employees are feeling. Establish an open-door policy that ensures every single employee feels their voice is vital.
- Adhere to evolving data privacy regulations, and ensure the ethical and safe use of employee data.
- Present findings and deliver recommendations to leadership in written and spoken format, connecting the dots between people data and business performance.
- Work closely with internal communications to lead the conversation on behavioral data: how we collect it, why we collect it and what's in it for the worker.
- Ensure external mindshare by publically speaking about our work to help drive global awareness of the benefits of behavioral data collection.
- Recommend new measures of collecting behavioral data. You'll work closely with the sensor integration team to ensure we have best-in-class methods of data collection.

SKILLS & QUALIFICATIONS

- Minimum of five years of experience in workforce intelligence or people analytics.
- A solid understanding of the ethics and privacy regulation on the use of personal data.
- An understanding of the behavioral sensor landscape (biometrics, emotion tracking, performance tracking, etc.).
- Experience analyzing large sets of sensitive data.
- Exceptional communication skills, both written and verbal. Confidence is key.
- A master's degree or equivalent in organizational psychology/behavior, psychology or anthropology.
- Proven interest in people's well-being, either through philanthropic efforts, coaching/mentoring or similar.



**We've found 21 jobs
that fit your profile.**

MID- TO HIGH-
TECH

Smart Home Design Managers

POSITION SUMMARY

With the rise of smart home technology, a new role is emerging, one that symbolizes the evolution of the traditional interior designer.

At RFD Architects, we're building a team of smart home design managers, who will work with architects, engineers and customers to design connected homes that cocoon inhabitants in a fully and seamlessly connected environment, using the latest integrated technology in an aesthetically and environmentally friendly manner.

These managers will spearhead our smart home design department and, in time, will manage geographically dispersed teams of smart home designers across our international offices.

OVERALL REQUIREMENTS

Smart home design managers will be an integral part of our architectural team that assists in making smart living a seamless and attractive way of life for our customers. Smart home design managers will stay up to date on the latest technological trends in the industry and will find novel ways of integrating this technology for maximum impact, with a blend of both traditional and contemporary style projects.

Our smart home design managers will work directly with clients, either remotely or in-person, to realize their smart, connected home utopia. Successful applicants should be willing and able to train and manage teams of smart home designers as we look to build out this department.

Smart home design managers will stay up to date on the latest technological trends in the industry and will find novel ways of integrating this technology for maximum impact, with a blend of both traditional and contemporary style projects.

SPECIFIC RESPONSIBILITIES

- Understand clients' specific needs and match these with the latest smart home technology available.
- Consult clients on smart home technology, enabling them to realize their vision in the most unobtrusive and efficient way possible.
- Stay up-to-date with all recent smart home technology developments by attending seminars on the topic and reading the latest literature.
- Seamlessly integrate smart homes technology into the architecture of a residence in an unobtrusive manner, where it can be updated as new technology is launched.
- Work in collaboration with traditional architects, builders and engineers to deliver on client requirements.
- Work remotely with the latest CAD and imaging software to deliver design services to geographically dispersed clients.
- Project-manage all stages of smart-home integration throughout the production cycle of a residence.
- Consult with on-site builders and engineers on how to integrate smart home technology.
- Train, mentor and manage the growing smart home design team.

SKILLS & QUALIFICATIONS

- Bachelor's degree in architecture.
- A minimum of three years of experience in traditional architecture.
- Excellent knowledge of smart home technology.
- Proven ability to project-manage a job from start to finish.
- Excellent communications skills.
- Proven experience with management and training.
- Ability to build rapport, create close relationships with and sell to high-net-worth individuals.
- A valid driver's license and clean driving record.

22 | 21 More Jobs of the Future



THE ONCE-IMAGINARY BECOMES REAL

In the year since we published last year's report, we've seen quite a few of the jobs we envisioned actually emerge at some real companies:

- Our *Financial Wellness Coach* became Metlife's *PlanSmart Financial Wellness*. The service, according to a press release, is "designed (as) a hybrid digital/human financial wellness service that supports users as they manage the twists and turns of their financial life journeys." The language is uncannily similar to the job description presented in our report.⁶
- Our *Man Machine Teaming Manager* and *Highway Controller* turned into a *Robot Manager* at Cobalt Robotics and a *Safety/Test Driver* at May Mobility, respectively.⁷
- Our *Memory Curator* and *Augmented Reality Journey Builder* jobs have been brought to life at Facebook, which is leveraging posted photos to create fully immersive experiences that recreate times gone by.⁸
- Our *Digital Tailor* job was made real by the leading Japanese retailer Start Today, with its Zozosuit.⁹

We fully expect to see more examples of the theoretical become reality with both last year's jobs and this new set. Remember, before it can be built, it has to be dreamt.

MID- TO HIGH-
TECH

Algorithm Bias Auditor

POSITION SUMMARY

We're looking for an executive to lead an important new function within our compliance team: algorithm bias audit (ABA). Given the increasing prominence of artificial intelligence in our business – from product development, to sales analysis, to recruitment, to contract review – it is vital that we ensure the algorithms at the heart of AI are fair, legal and representative of the values of our organization, and that they're seen to be as such. Algorithms are the key to commercial competitive advantage, and our algorithms must be 100% ethical. Our organization is a signatory member of the No Black Box Consortium, established by the European Commission in 2021.

OVERALL REQUIREMENTS

The head of ABA will lead a team that conducts a methodical and rigorous investigation into every algorithm across every business unit within the organization. The ABA team will work with development teams (from the technical and business functions) for new AI-based applications and will review existing systems. The head of ABA will establish an inventory system that logs and tracks each significant algorithm, its objectives, its input and output, related human value judgments and consequences.

Reporting to the Executive Director of Compliance, the head of ABA will be responsible for establishing guidelines and compliance methodologies that employees across the organization can easily understand and follow. The head of ABA will be required to provide timely reports on the status of algorithms on a real-time basis.

The head of ABA will establish an inventory system that logs and tracks each significant algorithm, its objectives, its input and output, related human value judgments and consequences.

SPECIFIC RESPONSIBILITIES

- **Establish and lead** a team of ABAs.
- **Create and maintain** an inventory of all algorithms across the business.
- **Produce bias guidelines** to lead development teams' understanding of appropriate and non-appropriate algorithm development.
- **Develop matrix-style co-review models** with development teams.
- **Initiate reporting methodologies** with finance, legal, executive and board-level management.

SKILLS & QUALIFICATIONS

- Experience in legal, compliance, technical, IT or executive management.
- A track record of managing senior personnel in complex, multi-disciplinary business functions.
- An understanding of modern, leading-edge IT development, while not required, will provide candidates with an advantage.
- A degree in a relevant area is required, and post-degree study is preferred.
- Proven commitment to diversity and inclusion.
- Excellent communication skills and a first-rate collegial approach.
- A manifested interest in leveraging the benefits of leading-edge technology while mitigating its downsides.



LOW- TO MID-
TECH

Uni4Life Coordinator

POSITION SUMMARY

Our university is proud to be one of the first to offer lifetime learning for all alumni. With our Uni4Life program, all alumni become lifelong learners who enjoy access to specially curated learning opportunities after they graduate. Because we understand that every learner is unique, we don't just focus on what people learn but also how they learn it, whether it's through a gaming-inspired platform or an old-school textbook. If an individual prefers to learn with others, our virtual e-professors are on hand. We even have virtual e-study groups to challenge perceptions and provoke new thinking.

We're looking for a curious and driven self-starter to join our team of Uni4Life coordinators. You will work side-by-side with our state-of-the-art Uni4Life AI technology to guide lifelong learners toward the best, most relevant programs for their individual needs.

OVERALL REQUIREMENTS

Over the past five years, we've been hard at work developing our Uni4Life AI technology. This tool collects data on lifelong learners (e.g., from LinkedIn) to build an up-to-date learning profile. Learners can also login to their profiles to make updates. The tool then uses state-of-the-art predictive algorithms to make recommendations that are tied to individual learner profiles and wider labor market data, such as employment and skills data. To help learners choose *how* to learn and not just *what* to learn, all courses monitor learner interaction and engagement to determine which learning style suits them best.

Lifelong learners can choose to interact solely with our AI coordinators (e.g., via chatbot or a virtual reality-enabled meeting room), but a large proportion of alumni still prefer to interact with one of our trusted Uni4Life coordinators. As a Uni4Life coordinator, you'll offer personal advice for lifelong learners and collaborate with them to ensure their learning plans are the perfect fit.

Above all, the Uni4Life coordinator should be passionate about learning and innately curious. Ideal candidates pride themselves on staying mentally fit and continuously acquiring new knowledge and skills. Due to popular demand, all Uni4Life coordinators have access to the learning database and receive their own personalized learning plan.

Because you'll work with alumni from across the globe, flexible working is a must to accommodate different time zones. There's no 9-to-5 here; however, we are passionate about work-life balance. Full-time and part-time positions are available.

Above all, the Uni4Life coordinator should be passionate about learning and innately curious. Ideal candidates pride themselves on staying mentally fit and continuously acquiring new knowledge and skills.

SPECIFIC RESPONSIBILITIES

- Understand the learning database. To keep up with the rapidly changing skills market, our learning database updates on a daily basis. We also hold a world-renowned catalog of antiquated subjects such as Greek Mythology and dial-up Internet access for those who enjoy learning about days gone by.
- Hold sessions with lifelong learners to understand their desires for continuous learning and give advice on suitable programs.
- Work alongside our Uni4Life AI technology to make tailored learning recommendations.
- Help others understand their own personal learning style and apply it to their ongoing education.
- Troubleshoot Uni4Life AI to identify glitches and gaps in functionality with our Uni4Life engineers. While this doesn't happen often, it's vital that coordinators feel confident in raising any unusual activity.
- Recommend new learnings to add to the system.

SKILLS & QUALIFICATIONS

- Excellent people skills.
- Undergraduate degree in any discipline.
- Experience working alongside sophisticated AI tools.
- Excellent understanding of all communication platforms, including technology such as VR Meet, Live Translate Messaging services, etc.
- While our Live Translate software is cutting-edge, any additional languages are a bonus for offering authentic experiences to alumni.



MID- TO HIGH-
TECH

Cyber Calamity Forecaster

POSITION SUMMARY

As made evident by the exponential growth in cyber threats, it's becoming increasingly important to understand and predict cyber conditions of the near-to-distant future, so that governments, industries, societies and individuals can better protect themselves and become more resilient. The position of cyber calamity forecaster is an opportunity to join our Global Cyber Calamity Research Center and help make the world a safer place.

The cyber calamity forecaster's primary task will be to monitor, detect and forecast cyber threats, and predict their impact. The forecaster will distinguish between highly improbable and wildly impossible cyber outliers, as well as accurately map cyber uncertainties and make predictions to prepare for their occurrence.

OVERALL REQUIREMENTS

The cyber calamity forecaster will reveal overlooked possibilities and expose unexamined assumptions about the cyber world. The ideal candidate will provide analytical, advisory and technical expertise and analysis related to global cyber activities by assessing the current and predicted cyber environments in order to issue cyber products, alert bulletins and forecasts.

You will work in a team environment at our global research center, developing statistical models and providing reliable and skillful probabilistic guidance to forecast lead times up to five weeks ahead. The role also entails integrating information into decision-making processes at all levels in order to mitigate cyber calamities. The end goal is to identify the full range of possibilities leading to cyber calamity, not simply a limited set of illusory certainties.



POSITIONS AVAILABLE!

APPLY NOW!

SPECIFIC RESPONSIBILITIES

- Perform quick-looks and assessments to determine the potential for impacts to physical infrastructure, individuals and businesses, and recommend changes dictated by advances in cyber tactics and technologies.
- Develop and monitor an AI cyber calamity system to analyze and evaluate cyber data, prepare forecast reports and take required actions. This process will also include identifying cyber sensitivities and shortfalls; conducting testing of calamity systems and equipment; and issuing advisories, watches and warnings to alert various agencies of possible inclement cyber calamity events.
- Publish a cyber forecast accuracy measurement index to identify false/inaccurate forecasts and learn from them to improve the accuracy of future forecasts. The forecaster will formulate detailed cyber hazard-specific guidelines.
- Collaborate with respective cyber agencies to formulate prospective planning within overall cyber calamity impact minimization efforts.
- Implement various programs to educate and raise awareness among citizens on various aspects of cyber hazards, such as their potential impacts and measures to mitigate losses.
- Produce and direct studies to improve forecasting techniques and abilities. These responsibilities will include advising governments and companies about the capabilities and limitations of cyber operations.
- Conduct mock drills on various cyber disasters to educate all stakeholders on capacity building and preparedness.

SKILLS & QUALIFICATIONS

- A Ph.D. in science, math, statistics or a related discipline.
- 10-plus years of work experience in forecasting/planning, with significant background in computerized prediction models and multi-tasking/cross-functional collaboration.
- Significant knowledge of the principles, concepts and theories of the Internet, and the standard practices, methods and techniques required to perform observations, forecasts and analyses.
- Hands-on experience in machine-learning approaches and models.
- Ability to quickly identify and respond to anomalous cyber environments and recognize cost/benefit trade-offs in the decision-making process.
- Capacity to interpret complex data.
- Knowledge of the advanced analytical principles, concepts and methods used to produce detailed analyses of complex information/situations attained from multiple sources.
- Proficiency using multiple tools and data sources.
- Willingness to work nights, weekends and occasional holidays.

The ideal candidate will provide analytical, advisory and technical expertise and analysis related to global cyber activities by assessing the current and predicted cyber environments in order to issue cyber products, alert bulletins and forecasts.

LOW- TO MID-
TECH

Esports Arena Builder

POSITION SUMMARY

Just like traditional sports fans, esports aficionados want to share an experience. Gamers typically engage esports remotely from outlets like Twitch (owned by Amazon), but live-action places to see matches in person – like theaters and gymnasiums – are gaining in popularity.

As a spinoff of our highly successful National Football League and Football Association franchises, we are developing the newest esports teams for Wisconsin (“The Badge”) and Manchester, UK (“The Geord”). We’ll first retrofit the Mall of the U.S.A., and use it as an operational prototype for the complete overhaul of Shopping Centre Park in the UK. The construction of these arenas will kick off the creation of the world’s biggest esports franchises. At 2.5 million square feet and capacity for 50,000 spectators, the arenas are already politically and legislatively energized in their respective cities, have been validated by the best gamers in the field, and are designed to capitalize on a \$12 billion industry by 2030.

OVERALL REQUIREMENTS

We’re seeking design-and-build construction managers to define all tasks needed for the build-out of esports arenas. Critical to success will be your ability to scope and manage more specialized operational roles, such as: contracts for laying down the latest in innovative “smart” foundations; installing miles of specialty cables; erecting immersive cage gaming structures; installing lighting and cutting-edge electrical systems and building locations; designing biometric AR/VR displays (including haptic feedback); and massive state-of-the-art high-definition screens that can expand or contract depending on crowd size, cultivating capacity-driven intimacy.

You’ll also deploy highly skilled equipment technologies for players’ personalized consoles. Voice UX designers will be needed to customize and curate in-the-moment hype-men and shout-casters in a variety of languages.

Your ability to source and secure fan experience professionals is also critical. Since tournaments lasting in excess of eight hours or more are not uncommon, this dimension of the job will be to curate something comparable to a revolving, multiday event, such as Coachella or Wimbledon, but blended with the vernacular look and feel of a high-end sports bar scaled to the size of an arena. Fan experience needs to cultivate premium services like real or virtual “docent/coaches” to help guests personally drop into an active player-vs.-player (PvP) game, or foster receptions with players from the team.

SPECIFIC RESPONSIBILITIES

- Work with team owners to initiate the arena design process and work closely with the design team to develop preliminary concept drawings.
- Serve as prime contractor and project manager for all manner of esports roles that optimize the experience of the arena: electronics, concessions, customer service, optimized performance of massively scaled Bluetooth and WiFi capabilities for attendees, etc.
- Oversee all architectural, design, engineering, construction, fan experience operations, managerial and administrative aspects of the arena.
- Work with senior architects to design and build esports arenas, using state-of-the-art examples as baseline templates (e.g., “gamescom” in Cologne, Germany, or the E3 Expo in Los Angeles).
- Ensure that arenas can withstand the “test of time,” with a technological superstructure that can support modular components that upgrade and evolve in line with future technology innovations, far beyond initial construction.

SKILLS & QUALIFICATIONS

- A master’s degree in architecture, construction management or a related field.
- 10-15 years of commercial and institutional design/build construction experience with a reputable firm (e.g., Populous or others).
- A passion for trailblazing in a cutting-edge, dynamic and collaborative esports community, involving a mix of construction styles fusing heavy electrical engineering and cutting-edge technologies, including sports or music venues, convention centers and airports.
- Minimum of five years’ experience in MMORPG competitive gaming (either at the university or accredited club level), or as an augmented reality journey builder.
- Registered architect with a current license.
- Team-oriented, self-driven work ethic and ability to meet fast-paced project demands.
- Proficient in estimating, scheduling, quality control, progress reports, progress billing, design review and coordination, cost reporting, safety and proposal preparation.

We’re seeking design-and-build construction managers to define all tasks needed for the build-out of esports arenas. Critical to success will be your ability to scope and manage more specialized operational roles, such as: contracts for laying down the latest in innovative “smart” foundations; installing miles of specialty cables; erecting immersive cage gaming structures; installing lighting and cutting-edge electrical systems and building locations; designing biometric AR/VR displays (including haptic feedback); and massive state-of-the-art high-definition screens that can expand or contract depending on crowd size, cultivating capacity-driven intimacy.

LOW-TO MID-TECH

Tidewater Architect

Human beings have continuously altered the natural landscape, for better and worse. But as we pass the point of no return in the fight against global warming, today's imperative is to work with Mother Nature in a more environmentally-friendly way.

We're an international engineering and architecture firm that will be hiring tens of thousands of workers to mitigate the impact of encroaching sea level rise in cities large and small around the globe. Chief among these roles will be the job of tidewater architect, whose primary responsibility will be the overall planning and execution of projects that work *with* nature – not against it – in cities all over the world. Immediate priorities will include cities such as Osaka, Shanghai, Alexandria (Egypt), Rio de Janeiro, Venice, New York City and Miami.

OVERALL REQUIREMENTS

Do you have an exceptional understanding of the coming impact of climate change on sea levels? Are you passionate about landscape architecture, civil engineering, urban planning or smart waterfront development to allow yesterday's architecture to survive in perpetuity even as the seas rise? Have you analyzed flagship engineering projects like New York City's High Line that offer a template for urban reclamation of former industrialized areas to yield greenspace woven throughout the fabric of the urban core? Then we need you – urgently.

Excellence in hydro-engineering, civil engineering and architectural design derived from the principles of moats, floats, super-dikes and wetlands is essential to this role. Graphic design excellence is also critical, to help make scientific content about past, present and future shoreline, tideline and urban interface digestible and accessible.

To create both conceptual and visual cohesion, engineering schematics and content analysis, the ability to use state-of-the-art augmented reality (AR) technologies will be a must, especially excellence using Google's "Floodtide" AR immersion, and data from the National Oceanic and Atmospheric Administration (NOAA) to model any timeframe for tidewater interface within the next 500 years to increase the effectiveness of your proposals.

The tidewater architect's responsibility will be the overall planning and execution of projects that work *with* nature – not against it – in cities all over the world.

SPECIFIC RESPONSIBILITIES

- Conceive and envision tidewater solutions to global warming as “living systems” by harnessing multiple disciplines, including landscape architecture, urban design and ecology.
- Design, build and maintain environmentally-sound municipal tide works, using state-of-the-art technologies to regulate tidal floods.
- Preserve the hydrogeological balance of shifting intertidal zones and – through ecological means – mitigate the impact of water intrusion into historic city centers.
- Work with national, state, county and/or municipal agencies responsible for studying, monitoring, planning, experimenting and implementing measures to safeguard cities.
- Engineer physical protection from the highest tides, as well as environmental compatibility of the design, to ensure tidal ecosystems thrive.
- Actively partner with environmental NGOs (World Wildlife Fund, The Nature Conservancy, etc.) to architect solutions that minimize and/or ameliorate habitat pollution.
- Harmonize solutions that yield urban park space to help revitalize neighborhoods and produce a halo effect of adjacent real estate development that helps usher in a renaissance of quality of life for residents.

SKILLS & QUALIFICATIONS

- A Ph.D. in environmental engineering, with an emphasis on construction project management. Candidates with a background in environmental science/studies will be given preference.
- Demonstrated excellence in hydro-engineering, civil engineering and architectural design experience using Scape's Oyster-Tecture is a plus.
- Experience with large-scale national or municipal environmental tidewater projects (e.g., Italy's MOSE project, the U.S.'s rebuild of New Orleans, the UK's Thames Barrier, the Netherlands' Oosterscheldekering).
- Ability to convene and collaborate with international panels of top civil engineering, design and academic experts to drive innovation, assess progress and validate results.

MID- TO HIGH-
TECH

Virtual Identity Defender

POSITION SUMMARY

It's not fake news to say that we're drowning in fake news. In fact, it would be fair (and balanced) to say we're now living in a "post-truth" world. New technologies are fast emerging that create the possibility to literally put words into somebody's mouth. This capability – broadly labeled as "deep fakes" – is opening a number of scenarios that range from the amusing to the apocalyptic.

Our company, Truedat Incorporated, is at the forefront of creating authenticatable digital watermarks that prove the veracity of someone or something and, conversely, signal an illegitimate intention in their absence. We're looking to fill the role of lead virtual identity defender, to scale and strengthen our existing product portfolio.

OVERALL REQUIREMENTS

We're looking for a world-class, seasoned executive to lead the team that will make our product vision a commercial reality – and runaway smash hit. As virtual identity defender, you should have demonstrable experience with leading development teams in complex technical areas and a proven track record working with recognizable brand name companies. You should be able to speak "tech" and "business" and be comfortable toggling and translating between the two.

Ideal candidates will be able to illustrate their technical strengths and identify the commercial results they've delivered. Given the leading-edge nature of our product and market opportunity space, you should be comfortable with ambiguity and flux, and be an "all-hands-on-deck" style leader. While you'll be required to contribute to the strategic development of our product, you shouldn't expect to operate in an ivory tower or behind the doors of a corner office.

SPECIFIC RESPONSIBILITIES

- Lead the technical aspects of product development.
- As a member of the senior leadership team, collaborate with the other senior leaders to craft and execute product and commercial strategy.
- Liaise with product marketing to create customer and prospect feedback loops.
- Keep abreast of leading-edge technological developments and embed these into the Truedat product set where appropriate.
- Interface with technology infrastructure management to ensure world-class customer experience levels.
- Recruit and retain a first-class team of developer talent.
- Manage the product development budget.

SKILLS & QUALIFICATIONS

- Executive leadership in a tier-one technology company.
- Graduate and post-graduate qualifications in a related technology field.
- 10-plus years in a mid- or senior-level role.
- International experience a plus.
- Experience in nontechnical functions (i.e., pre-sales, finance, etc.) will convey an advantage.

Our company, Truedat Incorporated, is at the forefront of creating authenticatable digital watermarks that prove the veracity of someone or something and, conversely, signal an illegitimate intention in their absence.



Head of Machine Personality Design

POSITION SUMMARY

Do you like people? Do you like machines? Then we've got the right job for you! How many times do you interact with a product or service and feel let down, uninspired or faintly annoyed by the experience? By imbuing an intelligent product/service/bot with a personality, we can establish a rapport with consumers in an increasingly transactional world.

As head of machine personality design, you'll lead a new team within our company, giving a unique voice and character to digital products or services. Your work counts when customers and machines interact, from parking machines, to robots that serve us in restaurants and bars. Your work will bring nondescript transactions (and our brand) to life with an authentic look, feel and character.

The role requires a deep knowledge of branding, sociology, philosophy, process design and machine learning to ensure that an automated interface engages and delights users and leaves them wanting more.

OVERALL REQUIREMENTS

The head of machine personality design will lead our newly-formed digital marketing engineering division. The ideal candidate will have an intuitive understanding and passion for people, culture, ethnography, sociology and branding. The person in this role will head up a multidisciplinary team working with internal and external stakeholders to inject an effective in-the-moment experience.

The job calls for creating "the voice of the brand," anywhere that the customer interfaces with the machine, product or service in question. You'll be expected to generate a personality prototype that fits – using both quantitative and qualitative market analysis techniques – and work alongside stakeholders to capture both user preferences and client aversions.

A key part of the job is "discovery," capturing the desires of the client and reconciling that with the aims of the customer experience. You'll run the testing and analysis, and develop the final personality design brief to be handed over to the interactive robotics team for a personality print. The right candidate will bring inventiveness, along with the ability to discover useful, valuable and quirky ideas that can be incorporated into the personality design. You'll also need a strong background in process engineering and voice analytics.

You'll be expected to generate a personality prototype that fits – using both quantitative and qualitative market analysis techniques – and work alongside stakeholders to capture both user preferences and client aversions.

SPECIFIC RESPONSIBILITIES

- Own the customer journey from end to end, visualizing and simulating customer personas to generate a “machine personality.”
- Inject the “voice of the customer” into the machine personality brief, by capturing the desired customer preferences and aversions at the point of delivery.
- Reconcile the “voice of the enterprise” into the machine interface and ensure a consistent brand experience across all automated touch-points.
- Test personality proposals for best fit, using an automated interface that spans voice, agreeableness and humor.
- Work across product delivery teams, such as the voice team, to ensure a match with a proposal.
- Tune the personality algorithm with inputs and outputs to the machine interface to fine-tune the offering post-implementation.

SKILLS & QUALIFICATIONS

- A flair for brand marketing with excellent leadership and interpersonal skills.
- Commercial experience in customer journey mapping and voice of the customer metrics. Focus on next-best-action analysis an advantage.
- Commercial experience in global ethnography (experience of Chinese and European markets preferred).
- A background in digital engineering and product management.
- Experience or degree in sociology-related field (desirable but not essential).



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THE FOUR E'S OF SKILLS

Not only are jobs changing; the skills underlying them are also shifting in importance, as well. That doesn't mean it's "old skills out; new skills in" across the board. Some old skills will retain their value for years and years, while some new skills will be a flash in the pan.

To better understand the value of any individual skill, consider how it fits within the following parameters:

- **Is it "eternal?"** Some human skills emerged at Creation/Big Bang: burping a baby, opposing a thumb, leveraging sticks and stones and fire, cooperating within the group, adapting. No matter how brilliant our technologies become, certain skills will continue to be of value through eternity.
- **Is it "enduring?"** Although the Bushmen of the Kalahari didn't have much call to sell things, the skill of selling has been important for as long as recorded time. Other such enduring skills – empathizing, trusting, helping, imagining, creating, striving – will continue to be vital. Enduring skills are central to jobs of the future.
- **Is it "emerging?"** New skills in the future align with the complexity, density and speed of work. Are you skilled enough to work with a 315MB Excel spreadsheet? Can you handle the sensory overload of a drone virtual cockpit? Can you assess which Common Vulnerability Scoring System action you should take first – in the next 15 seconds – before the cyber perimeter is breached? Fast-twitch/no-blink/e-game-honed/multi-tasking/guards-wearing candidates apply here.
- **Is it "eroding?"** Invariably, this year's leading-edge skill will become next year's commonplace prerequisite. Twenty years ago, consulting firms hired large teams of slide deck designers. Nowadays, a new hire who couldn't put together a presentation (using Prezi, not PowerPoint) on Day One of their job would be looked at in shock and amazement. A marketing manager candidate without a social media presence would not get a call back. The list of eroding skills is getting longer by the day, and many of them relate to technology. There's not much of a calling for loading film or setting up UUCP (Unix to Unix Copy Protocol) networks nowadays. If too many of your skills are on the eroding list, it could be time for a re-boot.

LOW- TO MID-
TECH

Virtual Reality Arcade Manager

POSITION SUMMARY

We're the largest developer and operator of virtual reality arcades in the U.S., with VR arcades in five cities – our first and biggest facility is in New York City – and plans to open another 20 in the next 36 months. We're looking for managers in the Boston, Chicago, Miami, Austin, Portland, Ore., London and Paris areas who want to get in on the ground floor of the next big entertainment trend: immersive, high-definition, multi-player experiential environments. Forecasts from leading authorities indicate that VR will be bigger than TV in a generation. This is an incredible opportunity to bring VR to the masses and establish yourself as a leader of the next big thing.

OVERALL REQUIREMENTS

As a virtual reality arcade manager, you'll manage the physical arcade and all the elements within it, including equipment, staffing, customer experience, merchandise retailing, food and beverage retailing, café/bar facilities, branding, local promotion, financial management and reporting. You'll liaise with central VR software developers, installers and maintenance crews to ensure the latest and greatest VR experiences are available and operational at all times within the arcade.

The person in this role will schedule/program the VR experiences throughout the arcade (and related promotions, advertising and PR) to follow different customer demographics; i.e., arcades are aimed at younger people during the morning, teenagers during the post-school afternoon, and older customers during the evening. You'll be responsible for the overall P&L of the arcade and will report to area management.

VR will be bigger than TV in a generation. This is an incredible opportunity to bring VR to the masses and establish yourself as a leader of the next big thing.

SPECIFIC RESPONSIBILITIES

- Drive store sales and KPIs.
- Develop a high-performing team that loves to sell and is committed to providing legendary customer service.
- Meet individual sales goals and help teach and inspire your team to achieve theirs.
- Demonstrate the best clienteling practices to your team with every customer interaction.
- Consistently represent our brand each day through behaviors that align with our customer experience creed.

SKILLS & QUALIFICATIONS

- Three to five years of store management experience; specialty retail experience highly preferred.
- Strong selling background with a proven track record of achieving top results in individual sales performance.
- An eye for talent, with the ability to recruit, train, develop and retain your team.
- Flexibility to work weekends, evenings and holidays when needed.
- High school diploma or equivalent; bachelor's or associate's degree preferred.
- Experience in high-tech environments a plus. Familiarity with virtual reality (the concept, the experience, the underlying technology) would provide candidates with a significant competitive advantage.



POSITIONS AVAILABLE!

APPLY NOW!

LOW- TO MID-
TECH

Vertical Farm Consultant

POSITION SUMMARY

Consumers want their food to be more fresh and delivered more quickly than ever before. While demand increases, nature's increasingly unpredictable impact on the produce supply chain applies pressure to grocers. Vertical farms address the need for stable, localized farming with aeroponic systems that grow food in controlled environments, unhindered by the impacts of global warming, while using a fraction of the water required by traditional farms.

As the sourcing of produce for consumption is localized across city centers and populous neighborhoods, experts are needed to tend the vertical farms and advise communities on best practices. Our organization seeks a vertical farm consultant to democratize the technology behind vertical farming and foster community in neighborhoods through food. This role requires a green thumb, technical know-how and a knack for building relationships while cultivating consensus within communities.

OVERALL REQUIREMENTS

While vertical farming is enabled by the latest in artificial intelligence and agricultural technology, convening a community around food is a decidedly low-tech affair. This is a technology role that calls for community organizing as much as computer science. We view dining as the peak of interpersonal interaction. Our automated approach to farming facilitates that very engagement to cultivate stronger communities while improving the health of our customers – one neighborhood at a time.

The job of the vertical farm consultant is threefold: setup, maintenance and education. You will work with clients (local governments, community leaders) to identify optimal locations for farming sites within neighborhoods and train residents on best practices for opening and operating the facility. Much of the process is automated through synchronized lighting and nutrient distribution systems, but users must still learn to set up and adjust their farming systems to account for optimizations, system failures and changing consumer preferences.

The ultimate goal of each vertical farm is to encourage healthier eating from local sources. As such, you will be tasked with creating educational plans that inform citizens on the health benefits of plant-based diets and how best to prepare meals that meet their time and resource needs.

SPECIFIC RESPONSIBILITIES

- Advise clients on optimal locations for vertical farms, with considerations for proximity to residential and commercial customers.
- Host educational workshops to teach community leaders best practices for aeroponic farming system operations.
- Maintain farming equipment and facilities.
- Analyze data to continuously optimize farming facilities and yield.
- Host community classes to teach meal prep planning with produce sources from vertical farm facilities.



SKILLS & QUALIFICATIONS

- Training or formal education in agricultural sciences.
- Passion for teaching others about nutrition.
- Experience with or aptitude for learning data analysis.
- Interest in and knowledge of urban planning disciplines.
- Excellent interpersonal and communication skills.
- Ability to work with a diverse set of clients.
- Experience building consensus among groups or community organizing.
- Experience planning and maintaining urban farm facilities preferred.

The job of the vertical farm consultant is threefold: setup, maintenance and education. You will work with clients (local governments, community leaders) to identify optimal locations for farming sites within neighborhoods and train residents on best practices for opening and operating the facility.

MID- TO HIGH-
TECH

Machine Risk Officer

POSITION SUMMARY

As artificial intelligence (AI) infiltrates every part of our lives, its unknown challenges will only become more pressing and surprising to us. From unexpected or biased results, to perpetuation of dangerous errors, we're sensitive to the unintended consequences of the actions of intelligent machines and how these errors could have a significant impact on our company's brand and finances.

As a key member of our global leadership team, the machine risk officer will manage the potential risks that may occur if intelligent machines fail. This role will also work to establish human-machine trust and protect the company's brand, reputation and finances by proactively addressing machine ethics issues.

OVERALL REQUIREMENTS

As working with intelligent machines becomes increasingly commonplace, we want to mitigate our risks and avoid any consequences for our human workers and customers for wrongdoing or harmful conduct performed by machines.

The role of machine risk officer will be essential to developing new trust mechanisms and imagining new risk-benefit approaches for working with intelligent machines. The employee in this position will define roles and responsibilities between humans and machines and set the rules for how human counterparts should handle machine-caused wrongdoing.

This will involve designing trustworthy experiences, training employees, developing risk-benefit matrices, overhauling ethics principles and ensuring our employees are in the driver's seat to monitor machines. The successful candidate will directly lead a small team of machine risk professionals across geographies.

SPECIFIC RESPONSIBILITIES

- Develop a risk-benefit matrix to better understand if the risks of the unknown consequences of working with intelligent machines are worth the business benefits delivered by them.
- Train AI engineers, designers, developers, investors and innovators, and hold them accountable for not only defining specific tasks for intelligent machines but also for recognizing their side effects. It will be vital to ensure that machine designers include clear mechanisms for passing control back to humans when baselines and thresholds are exceeded, and that humans are ready for the hand-off.
- Win employees' trust by ensuring that the objective function of the machine is well defined and follows designer specifications. You will establish clear hierarchy rules to ensure that each machine has only a supportive function, not a replacing one, so that the power to make decisions always resides with humans.
- Create self-regulation policies based on openness and accountability, with an obsession for maintaining consumer trust. You will take the lead in protecting the company's brand from the unknown consequences of machines rather than waiting for machine regulations to evolve.
- Ensure transparency in how developers, engineers and designers embed ethical values into intelligent machines, and monitor the anticipated outcomes of these choices.
- Crowdsource ideas among companies, governments, startups and other industry stakeholders to better address the risks of working with machines and to help make better human decisions.

- Ensure machines learn positively from humans' actions and work, and use machines to monitor other machines.
- Lead the responsible innovation initiative, assisting our clients and mitigating risks by embracing machine improvements.

SKILLS & QUALIFICATIONS

- At least 10 years of experience in the compliance/risk field. Regardless of their business pedigree, candidates must possess a deep intellect of both the current and emerging risks facing the business.
- A passion for programming and robotics and an understanding and/or interest in entrepreneurship, corporate innovation, human resources, talent management and operations.
- Hands-on experience with monitoring technology systems from a risk standpoint.
- Proven ability to build and maintain relationships with C-level executives, and influence decision-making processes at this level.
- Experience in project and process management.
- Strong quantitative and qualitative analytical skills.
- Excellent leadership, communication and collaboration skills.
- We may also consider candidates with a track record for leading within a sound, well-respected, multinational, regulated business.

The employee in this position will define roles and responsibilities between humans and machines and set the rules for how human counterparts should handle machine-caused wrongdoing.

LOW- TO MID-
TECH

Subscription Management Specialist

POSITION SUMMARY

From razor blades to music to cars, ownership is increasingly being replaced by subscriptions. That's why our large consultancy needs a subscription management specialist to create a framework of linked subscriptions to establish and advance customer familiarity, loyalty and a direct sales channel.

If you're a media manager, a creative business analyst or a product manager with a talent for complex, interactive ecosystems of linked money streams, you've got what it takes to become a subscription management specialist. Your work will reduce customer confusion by simplifying the subscription process and identifying cross-selling or upselling opportunities and brokering them with a host of third-party providers.

The position is twofold: investigating the most suitable subscriptions for acquiring new customers, increasing the value of existing customers and reducing customer churn, while also undertaking micro-subscription service development by exploring opportunities to partner and develop a suite of micro-payment options for customers.

OVERALL REQUIREMENTS

As a subscription management strategist, you'll be expected to analyze every situation where customers have contact with our clients' brand or business, qualify the emotions involved and then propose a micro-subscription strategy to fulfill them. The job requires investigating, tracking, shaping and proposing the micro-payment decisions to ensure brand alignment with customer behavior.

You'll then find the most compatible and beneficial subscriptions to communicate our clients' values, often involving partnering. You'll help shape the cost and perks of a wide range of micro-subscription service offerings in a way that fits with clients' strategic goals. The real goal is to find the "sweet spot" that will keep customers subscribed to and loyal to our clients' brands and to uncover the opportunities to build a network of interlinked subscriptions around every customer.

You'll work on establishing a fast, simple and automated customer acquisition workflow brokered via partners, and fine-tune and activate them with Amazon-like levels of ease and simplicity. The role demands a mix of creative, tech and business savvy, ensuring customers have intuitive and comprehensive tools to manage their accounts while monitoring their use and extrapolating a predicted upgrade path. By investigating the most suitable subscriptions to meet customer needs and matching them to communicate our clients' brand value, you ensure our business thrives.

You'll help shape the cost and perks of a wide range of micro-subscription service offerings in a way that fits with clients' strategic goals. The real goal is to find the "sweet spot" that will keep customers subscribed to and loyal to our clients' brands and to uncover the opportunities to build a network of interlinked subscriptions around every customer.

SPECIFIC RESPONSIBILITIES

- Develop micro-subscription services and partnerships, and define tiered benefits with a strong link to loyalty.
- Seek emerging sources of value by participating in innovation forums, with a focus on micro-subscription service opportunities and potential providers.
- Monitor customer spending by analyzing key metrics from subscription value and forward revenue recognition, and provide insight into customer value and the financial health of the business.
- Manage the crossroads (licensing, cost and value-alignment) between multiple stakeholders inside and outside the business.
- Tweak subscription functionalities (i.e., on/off as required, away on holiday, single-use) and consumption models (i.e., per minute or per movie) to create the most attractive offering.
- Conduct market research. You'll be expected to research and master the emerging market for micro-subscription services and linked subscriptions.

SKILLS & QUALIFICATIONS

- A strong creative/commercial sense, with the ability to continuously think of appropriate ways to generate micro-transactions through partners to extend the customer base and mitigate churn.
- Experience with strategic analytics and an ability to read customer data and extrapolate meaning and micro-subscription service strategy.
- Experience with running innovation hacks, gathering multiple stakeholders together to determine micro-transaction opportunities and subscription hotspots.
- Experience with product pricing and packaging, as well as a demonstrated background in fast, simple and automated customer acquisition workflows across multiple channels and their impact on subscriptions revenue.
- A background in revenue modeling, with an understanding of how changes to customer transactions (renewals, suspensions, add-ons, upgrades, terminations, etc.) impact revenue flow and profitability.
- Training in multi-channel customer support, with an understanding of what it takes to deliver Amazon-like levels of ease and simplicity.
- A finance background, with an understanding of payment gateways across key regional markets to determine the most appropriate collection paths.



MID- TO HIGH-
TECH

Flying Car Developer

POSITION SUMMARY

Within the next five years, flying cars will become an option for high-net-worth individual customers. Within 10 years, mass market adoption will occur.

We're engaged in a winner-takes-all race against well-funded Silicon Valley start-ups and nationally, state-backed champions to develop this next major transportation paradigm. We're hiring talented auto/aerospace engineers to join our rapidly growing team to make the long-held dream of flying cars a reality. Join us and see your career take off!

OVERALL REQUIREMENTS

We're looking for team members across every aspect of engineering, software development, aeronautics, battery technologies, materials development, etc. that can assist us in taking our V1 & V2 prototypes into commercial development. Whether your background is in autos or aerospace, we have a position for you.

We're looking for the most highly credentialed and experienced talent, gifted/burdened with an obsession to tackle the most complicated and sophisticated challenges available in the world today. If your passion is to make the impossible possible, this job is for you!



SPECIFIC RESPONSIBILITIES

- DNK. You'll figure it out.
- TBC. We'll figure it out.
- We need to build sh*t and ship. You need to muck in and do what's necessary.

SKILLS & QUALIFICATIONS

- Academic qualifications from a leading school or academy focused on the auto and aero-engineering disciplines.
- A background with leading auto and/or aerospace companies. "Above-earth orbit-related" employment is a competitive advantage.
- Experience with nontraditional/nonconventional development companies will be regarded favorably.
- Practical, hands-on experience in any aspect of engineering and/or technical development will be weighted more heavily than academic qualification.
- Doers – not dreamers – are sought.
- If you're a *prima donna*, this is *not* the job for you.

We're engaged in a winner-takes-all race against well-funded Silicon Valley start-ups and nationally, state-backed champions to develop this next major transportation paradigm. We're hiring talented auto/aerospace engineers to join our rapidly growing team to make the long-held dream of flying cars a reality. Join us and see your career take off!

MID- TO HIGH-
TECH

Haptic Interface Designer

POSITION SUMMARY

Do you know when something instinctively “feels” right? The right weight and texture can turn a cheap device into a luxury item, or enrich the customer’s experience. With new materials and the ability to program responsive textures comes new opportunities to use haptic surfaces (from personal clothing items to outdoor advertising) to create desire or interest through touch.

We’re looking for an ambitious individual to work within our advertising agency, with the aim of maximizing the impact of outreach campaigns through a range of haptic media platforms. As part of our team, the haptic interface designer will work at the intersection of surface haptics, sourcing textures, materials and vibrations that invite touch and connect with the audience. The work you do will convey comfortable, relaxing feelings that guide customers through their interaction with a portfolio of products.

OVERALL REQUIREMENTS

The haptic interface designer will identify which wearable and touch-surface platforms work best to combine and advertise a brand or product. The work is project-based, turning everyday mundane products and experiences into rich contextual customer journeys.

For example, you could help plan a tactile journey from the train station to a café using outdoor railings and AR mobile location-aware ads. Once at the café, the customer could use their coffee-table and coffee-cup experience and turn that end-of-transaction moment into a physically rewarding touchpoint.

You’ll be expected to familiarize and source the most relevant surface mediums to create desire for and interest in our brands and products. Then you’ll brief the creative and engineering teams with the expected outcome and follow-up actions from a haptic experience.

Ideally, you’ve worked in the fields of physical product design, tactile fashion or packaging and are familiar with the tactile properties of old and new surfaces, are aware of the latest trends in haptic applications for augmented experiences, and understand the balance between the need for usability and the desirability of sensorial experiences (from ultra-smooth to bohemian textiles). So why don’t you join our team at the cutting edge of product marketing?

The haptic interface designer identifies which wearable and touch-surface platforms work best to combine and advertise a brand or product. The work is project-based, turning everyday mundane products and experiences into rich contextual customer journeys.

SPECIFIC RESPONSIBILITIES

- Develop multi-dimensional communication plans, combining anticipation, functionality and desire with haptic planning.
- Identify trends in tactile surfaces (i.e., cold-smooth is out, warm-stone is in).
- Create the haptic brief and lead the briefings for the creative and engineering teams for touchpoint campaigns.
- Be the go-to-person for product developers, defining the surface qualities of each touch-point and crafting a tactile call-to-action.
- Segment customers by planning the medium breakdown and segmentation according to customer expectations.
- Deliver a plan that accounts for high-, low- and no-tech tactile experiences.

SKILLS & QUALIFICATIONS

- Experience in wearables and surface technologies.
- Strong background in product design, cognitive psychology or human sciences.
- Knowledge of product planning, marketing and/or advertising.
- A background in fashion is a big bonus.
- Degree in materials design desirable but not essential.

LOW- TO MID-
TECH

Chief Purpose Planner

POSITION SUMMARY

“Purpose” is the new commercial battleground, and our agency needs people to conceive, shape and launch dedicated purpose journeys for our clients as they seek differentiation. You’ll help our clients define and articulate their contribution to society and their purpose for both customers and prospective employees.

Being a chief purpose planner means mastering a corporate brief and using all social channels to help clients build, maintain, manage and burnish their purpose in the minds of an increasingly crowded market. If you currently work in public relations with an eye on social media and have a talent for influencing people, you’re well on your way to being a chief purpose planner.

OVERALL REQUIREMENTS

As chief purpose planner, you’ll help shape and promote a defined corporate purpose that aligns with both clients’ customers and employees. Because we recognize that corporate purpose attracts customers as well as engages employees, these projects will take place between the marketing and HR functions. (Our internal research shows that attracting talent correlates with a company’s perceived sense of purpose.)

Your role will be to develop a corporate purpose strategy and narrative, then work as a communication catalyst across the client’s company. You’ll identify social causes, align stakeholders, negotiate purpose agreements, secure funding and encourage the flow of information, ideas, content and influence with internal and external stakeholders. This positive reinforcement will instill long-term positive attitudes around the organization and the products and services it sells.

The aggregated collection of mood and empathy interactions will turn customer touch into sales and reduce employee attrition rates and increase the talent pipeline. Ultimately, your work will position our clients favorably, increasing the effectiveness of each customer touchpoint and improving the company’s brand.

Chief purpose planners are the next iteration of PR. Key requirements for this role are a deep understanding of consumer ethics and an active involvement in social causes on a regional and international stage.

The aggregated collection of mood and empathy interactions will turn customer touch into sales and reduce employee attrition rates and increase the talent pipeline. Ultimately, your work will position our clients favorably, increasing the effectiveness of each customer touchpoint and improving the employee brand.

SPECIFIC RESPONSIBILITIES

- Create, shape and own the delivery of the purpose strategy and narrative for clients.
- Influence our clients' employee conversations by working with HR to champion the "voice of the employee" through various communication channels.
- Consult with multiple stakeholders and align with social causes, maintaining a register of causes and their suitability for funding.
- Ensure cross-functional alignment by liaising with the in-house ethics team and chief trust officer to define content and communication plans.
- Negotiate third-party agreements to ensure funding reaches the right audience and makes a perceptual difference.
- Build the content strategy, working with marketing/social media teams to develop annual, quarterly and monthly influencer targets.

SKILLS & QUALIFICATIONS

- Agency-side, mid-careerist with 15 years or more experience. This role is a leadership position with budget-line responsibility, so finance skills are necessary. (Metrics on employee retention will form a big part of your bonus!)
- Solid background in corporate ethics and proven ability to analyze and influence corporate perceptions.
- Flair for social media and employee engagement. Ability to demonstrate campaign influence on the clients' organization and beyond.
- Background in economics and an ability to interpret macroeconomic trends as they relate to and influence customer activity.
- A "challenger mindset," with a proven ability to build and maintain relationships with C-level HR, CMO and CTO executives as equals, and challenge where necessary.
- Qualifications in macroeconomics and/or sustainability.

It's the End of the World as We Know It ... And I Feel Fine¹⁰

We are all afraid – for our confidence, for the future, for the world. That is the nature of the human imagination. Yet every man, every civilization, has gone forward because of its engagement with what it has set itself to do. The personal commitment of a man to his skill, the intellectual commitment and the emotional commitment working together as one, has made the Ascent of Man.

The Ascent of Man, Jacob Bronowski¹¹

Bronowski's words, the last lines of his epic book and television series, were written in 1973, at the height of the Cold War, the oil crisis and Watergate. *Tie a Yellow Ribbon Round the Ole Oak Tree* was No. 1 on the charts. Bell bottoms were in, and plaid was all the rage. No wonder Bronowski saw a grim future ahead and felt moved to issue a rallying cry on behalf of his fellow world citizens.

Fast-forward 45 years, and humans have continued to ascend; the world is far wealthier than it was in 1973, far healthier, more secure. We may have a cyber war, an energy crisis and White House turmoil, and plaid may be all the rage again, but Bronowski would be astonished at how the world has changed (for the better).

However, re-reading *The Ascent of Man* makes it clear just how hardwired fear is in the human psyche. Fear is as central to humans as hope and laughter, innovation and love. On our recent travels, telling the greatest story of our time – the rise of artificial intelligence – fear has lurked in every room. Sometimes it's been at the edges, sometimes right bang in the front row. *Everybody is under pressure to outrun the machine.*

As Bronowski reveals, this is the nature of the human imagination. But as he also points out, civilizations have gone forward because of engagement with *what they have set themselves to do*. This is the great challenge of our time – to engage with the future. Imagining (and creating) jobs for the future is a good start.

ONE'S END IS ANOTHER'S BEGINNING

At one event where we spoke, we came under fire from an audience member who was repulsed by the new jobs we were outlining: "These are terrible jobs," the attendee said, "based on horrible technologies, reinforcing awful ideas. I'm worried." The speaker, a senior U.S. academic (of an, ahem, certain vintage), passionately railed against how the times were changing. In her crescendo, it was easy to imagine that it was the end of the world as we know it.

And of course she was right – it is the end of the world as *she* knows it. But it is absolutely not the end of *the* world.

The fear, uncertainty and doubt (and disgust) that is abroad at the moment is the product of a world changing at an unprecedented speed and of a swath of people (not necessarily always older people, but certainly often older people) who are aging out of it. If you've made a living,

The world has always changed, and always will continue to change. The jobs we do have always changed, and always will continue to change. There is nothing more platonically virtuous about being an accountant than an algorithm bias auditor.

raised a family and built an identity from being an accountant (or a humanities professor), becoming an algorithm bias auditor just seems plain wrong.

This is natural, this is understandable, but most importantly – particularly if you’re a senior leader – this is a mistake. The world has always changed, and always will continue to change. The jobs we do have always changed, and always will continue to change. There is nothing more platonically virtuous about being an accountant than an algorithm bias auditor. Dylan is not platonically better than Drake, nor worse than Keats.¹²

Michael Stipe of the now-retired band R.E.M. had it right; it’s the end of the world as we know it, and he felt fine. So should you.

The final word (for now) should go to another great writer, Douglas Adams of *The Hitchhiker’s Guide to the Galaxy* fame:

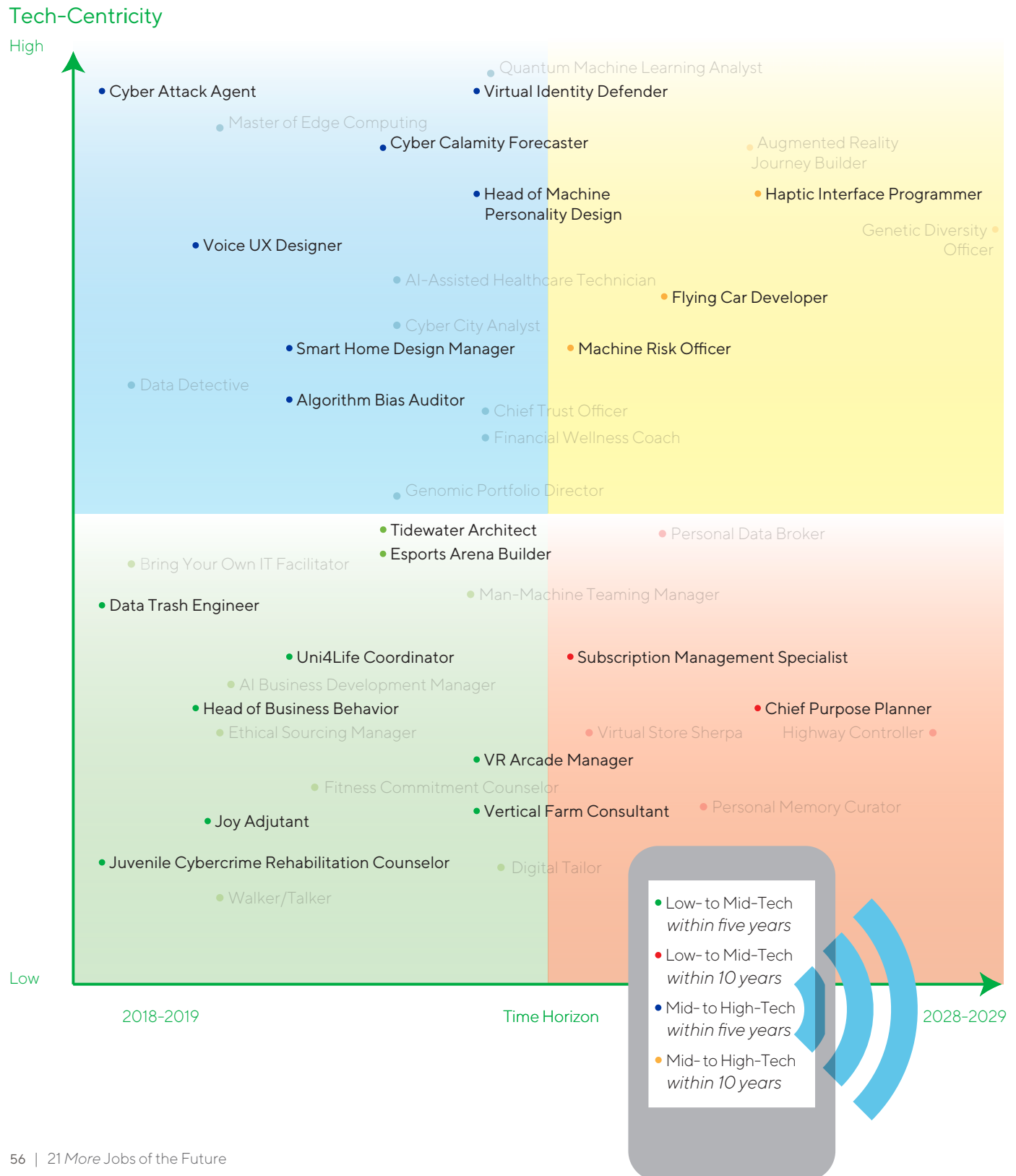
I’ve come up with a set of rules that describe our reactions to technologies:

- 1. Anything that is in the world when you’re born is normal and ordinary and is just a natural part of the way the world works.*
- 2. Anything that’s invented between when you’re 15 and 35 is new and exciting and revolutionary, and you can probably get a career in it.*
- 3. Anything invented after you’re 35 is against the natural order of things.¹³*

Our jobs of the future may be against the natural order of things, but they are the future. Engage ...

42 Jobs: The Road to 2028-2029

Here are all 42 jobs covered in our two reports, by tech centrality and timeframe. Greyed out job titles are from last year's report, and black titles are from this year's report.



Appendix

JOBS BY TECH-CENTRICITY

Low- to Mid-Tech

(listed in order of tech-centricity)

Juvenile Cybercrime Rehabilitation Counselor	12
Joy Adjutant	16
Vertical Farm Consultant	42
VR Arcade Manager	40
Head of Business Behavior	18
Chief Purpose Planner	52
Uni4Life Coordinator	26
Subscription Management Specialist	46
Data Trash Engineer	8
Esports Arena Builder	30
Tidewater Architect	32

Mid- to High-Tech

(listed in order of tech-centricity)

Algorithm Bias Auditor	24
Smart Home Design Manager	20
Machine Risk Officer	44
Flying Car Developer	48
Voice UX Designer	14
Head of Machine Personality Design	36
Haptic Interface Programmer	50
Cyber Calamity Forecaster	28
Virtual Identity Defender	34
Cyber Attack Agent	10

JOBS BY TIMEFRAME

Within the Next Five Years

Data Trash Engineer	8
Cyber Attack Agent	10
Juvenile Cybercrime Rehabilitation Counselor	12
Voice UX Designer	14
Joy Adjutant	16
Head of Business Behavior	18
Smart Home Design Manager	20
Algorithm Bias Auditor	24
Uni4Life Coordinator	26
Cyber Calamity Forecaster	28
Esports Arena Builder	30
Tidewater Architect	32
Virtual Identity Defender	34
Head of Machine Personality Design	36
VR Arcade Manager	40
Vertical Farm Consultant	42

Within the Next 10 Years

Machine Risk Officer	44
Subscription Management Specialist	46
Flying Car Developer	48
Haptic Interface Programmer	50
Chief Purpose Planner	52

Endnotes

¹ Malcolm Frank, Paul Roehrig and Ben Pring, *What to Do When Machines Do Everything*, Wiley, 2017, <https://www.amazon.com/What-When-Machines-Everything-Algorithms/dp/111927866X>.

² Carl Benedikt Frey and Michael A. Osborne, "The Future of Employment: How Susceptible Are Jobs to Computerisation?" Oxford University, Sept. 17, 2013, https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf.

³ "21 Jobs of the Future: A Guide to Getting and Staying Employed," Cognizant Technology Solutions, November 2017, <https://www.cognizant.com/whitepapers/21-jobs-of-the-future-a-guide-to-getting-and-staying-employed-over-the-next-10-years-codex3049.pdf>.

⁴ On Nov. 18, 2017, Ivanka Trump tweeted: "A new study suggests that the robot revolution could create 21 million new jobs. The author states, 'Work will change, but it won't go away.' We must prepare American students & workers for the jobs of the future! #WorkforceDevelopment #STEM #CS."

⁵ Orbit City is where the Jetsons family lived in the animated sitcom of the same name.

⁶ "Metlife and EY to Offer Hybrid Human/Digital Financial Wellness Solution," Planadviser, March 22, 2018, <https://www.planadviser.com/metlife-ey-offer-hybrid-human-digital-financial-wellness-solution/>.

⁷ Daniela Hernandez, "Seven Jobs Robots Will Create – or Expand," *The Wall Street Journal*, April 29, 2018, <https://www.wsj.com/articles/seven-jobs-robots-will-create-or-expand-1525054021>.

⁸ Daniel Terdiman, "Facebook Will Let You Build Immersive 3-D 'Memories' from Old Photos," *Fast Company*, May 1, 2018, <https://www.fastcompany.com/40566448/facebook-will-let-you-build-immersive-3d-memories-from-old-photos>.

⁹ Marc Bain, "A Japanese Retailer Is Using this Polka-Dot Suit to Bring its Customer-Fit Clothes to the World," Quartz, July 3, 2018, <https://qz.com/quartz/1320231/japans-start-today-is-using-its-polka-dot-zozosuit-to-bring-custom-fit-clothes-to-the-world/>.

¹⁰ A lyric from "It's the End of the World As We Know It," R.E.M., *Document*, 1987.

¹¹ Jacob Bronowski, *The Ascent of Man*, BBC Books, 1973, <https://www.amazon.com/Ascent-Man-Dvd-Set/dp/B000NDI3SK>.

¹² For more on this discussion, see Hugh Linehan, "Bob Dylan's Nobel Win Rekindles Debate Over 'High' vs. 'Low' Culture," *Irish Times*, Oct. 13, 2016, <https://www.irishtimes.com/culture/bob-dylan-s-nobel-win-rekindles-debate-over-high-v-low-culture-1.2828812>.

¹³ Douglas Adams, *The Salmon of Doubt*, Del Ray, 2005, <https://www.amazon.com/Salmon-Doubt-Douglas-Adams/dp/0345455290>.

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Ben Pring co-founded and leads Cognizant's Center for the Future of Work. He is a co-author of the best-selling and award-winning books *What To Do When Machines Do Everything* (2017) and *Code Halos: How the Digital Lives of People, Things, and Organizations are Changing the Rules of Business* (2014).

Ben sits on the advisory board of the Labor and Work Life program at Harvard Law School. In 2018, he was a Bilderberg Meeting participant.

Ben joined Cognizant in 2011, from Gartner, where he spent 15 years researching and advising on areas such as cloud computing and global sourcing. Prior to Gartner, Ben worked for a number of consulting companies, including Coopers and Lybrand.

At Gartner, Ben was the lead analyst on all things "cloud"; he wrote the industry's first research notes on cloud computing (in 1997!) and Salesforce.com (in 2001), and became well known for providing provocative but accurate predictions about the future of IT. In 2007, Ben won Gartner's prestigious annual Thought Leader Award.

Ben's expertise in helping clients see around corners, think the unthinkable and calculate the compound annual growth rate of unintended consequences has made him an internationally recognized authority on leading-edge technology and its intersection with business and society. His work has been featured in *The Wall Street Journal*, *Financial Times*, *The London Times*, *Forbes*, *Fortune*, *MIT Technology Review*, *The Daily Telegraph*, *Quartz, Inc.*, *Axios*, *The Australian* and *The Economic Times*.

Based in Boston since 2000, Ben graduated with a degree in philosophy from Manchester University in the UK, where he grew up.

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Prior to joining the CFoW, Caroline was part of Cognizant Consulting, working in international digital services and transformation across the retail and healthcare industries. She has a bachelor of arts degree (Hons.) in German from the University of Bristol, alongside which she is certified in theatre and performance at Bristol Acting Academy.

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NEER • HEAD OF MACHINE PERSONALITY DESIGN • CHIEF PURPOSE PLANNER • SUBSCRIPTION MANAGEMENT SPECIALIST • HAPTIC INTERFACE DESIGN
CRIME REHABILITATION COUNSELOR • TIDEWATER ARCHITECTS • ESPORTS ARENA • SMART HOME DESIGNER • FLYING CAR DEVELOPER • VIRTUAL REALITY
CYBER CALAMITY FORECASTER • DATA TRASH ENGINEER • HEAD OF MACHINE PERSONALITY DESIGN • CHIEF PURPOSE PLANNER • SUBSCRIPTION
M BIAS AUDITOR • CYBER ATTACK AGENT • JUVENILE CYBER CRIME REHABILITATION COUNSELOR • TIDEWATER ARCHITECTS • ESPORTS ARENA • SMART
COORDINATOR • HEAD OF BUSINESS • MACHINE RISK OFFICER • CYBER CALAMITY FORECASTER • DATA TRASH ENGINEER • HEAD OF MACHINE
R • VERTICAL FARM CONSULTANT • VOICE UX DESIGNER • ALGORITHM BIAS AUDITOR • CYBER ATTACK AGENT • JUVENILE CYBER CRIME REHABILITATION
ALITY ARCADE MANAGER • VIRTUAL IDENTITY DEFENDER • UNI4LIFE COORDINATOR • HEAD OF BUSINESS • MACHINE RISK OFFICER • CYBER CALAMITY
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