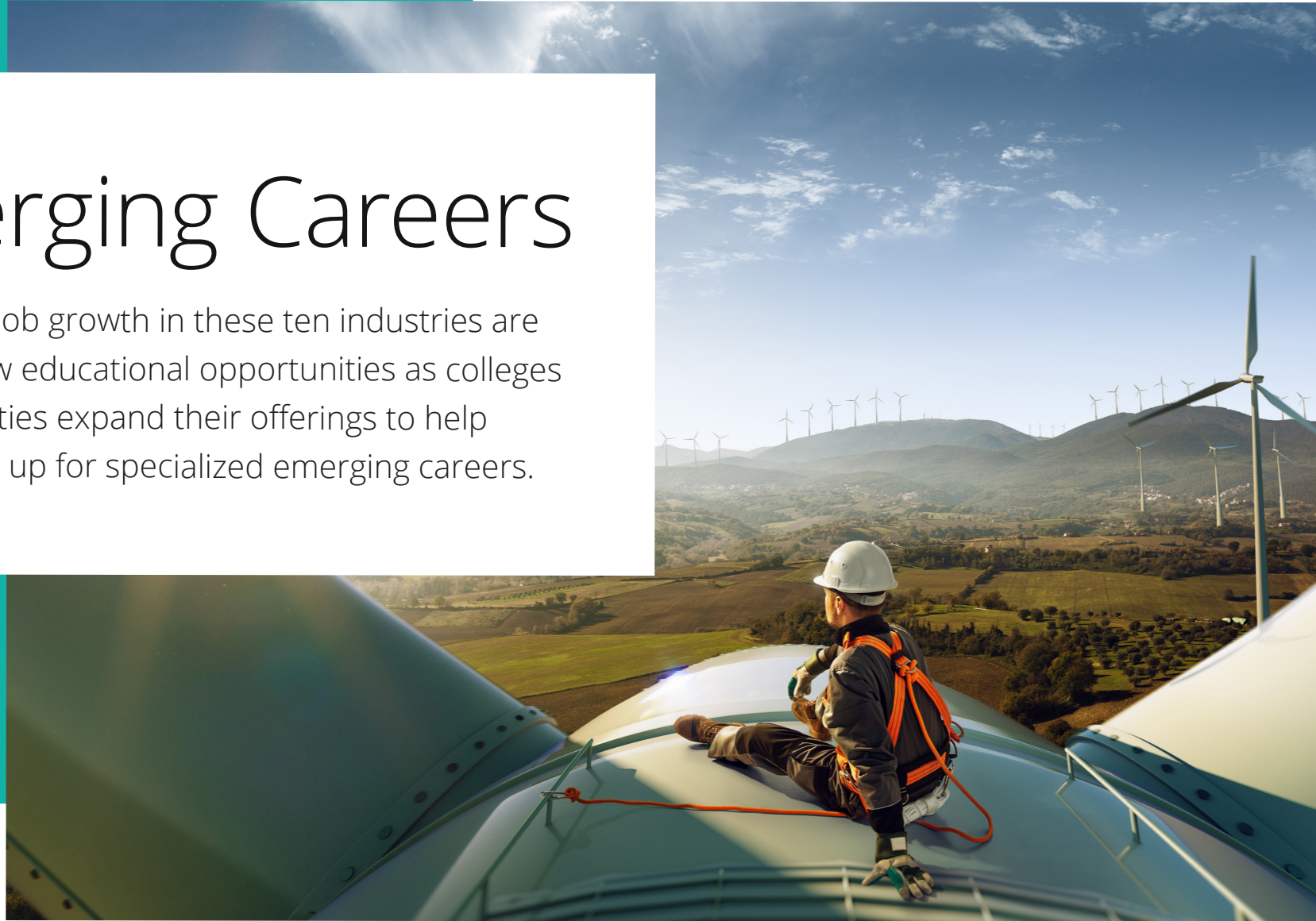


# Emerging Careers

Market and job growth in these ten industries are inspiring new educational opportunities as colleges and universities expand their offerings to help learners skill up for specialized emerging careers.



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04	Careers in Comparison
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# New learning paths for growing markets

Many factors contribute to the evolution of the job market, including technological advancement, shifting cultural trends, and an aging population. This last factor is part of the reason that more than half of the 10 fastest growing occupations are in the field of healthcare.<sup>(1)</sup> These are undeniably important jobs and represent clear opportunities for job seekers. Though this may change as the industry evolves post-pandemic, the educational path for most healthcare professionals is largely unchanged in recent years.

The ten emerging careers presented here represent a cross section of jobs that have not only arisen from technological and cultural change, but are also transforming the higher education landscape and broadening the types of degrees being offered. The first field is **wine & beer**, which is not a new industry, but one seeing a resurgence of interest at the craft and boutique level — and as a result, the variety of educational options is growing quickly.

**Social media**, **eSports**, and **online education** industries are increasingly in need of qualified job candidates as more and more people move online to consume and interact with content.

**Health informatics** support the digitization of our healthcare system, while **Internet of Things** experts are automating our lives with smart devices. This shift to a cloud-based world has created a greater demand for experts in **cyber security** to keep our personal data safe and for **data scientists** to make meaning from it all.

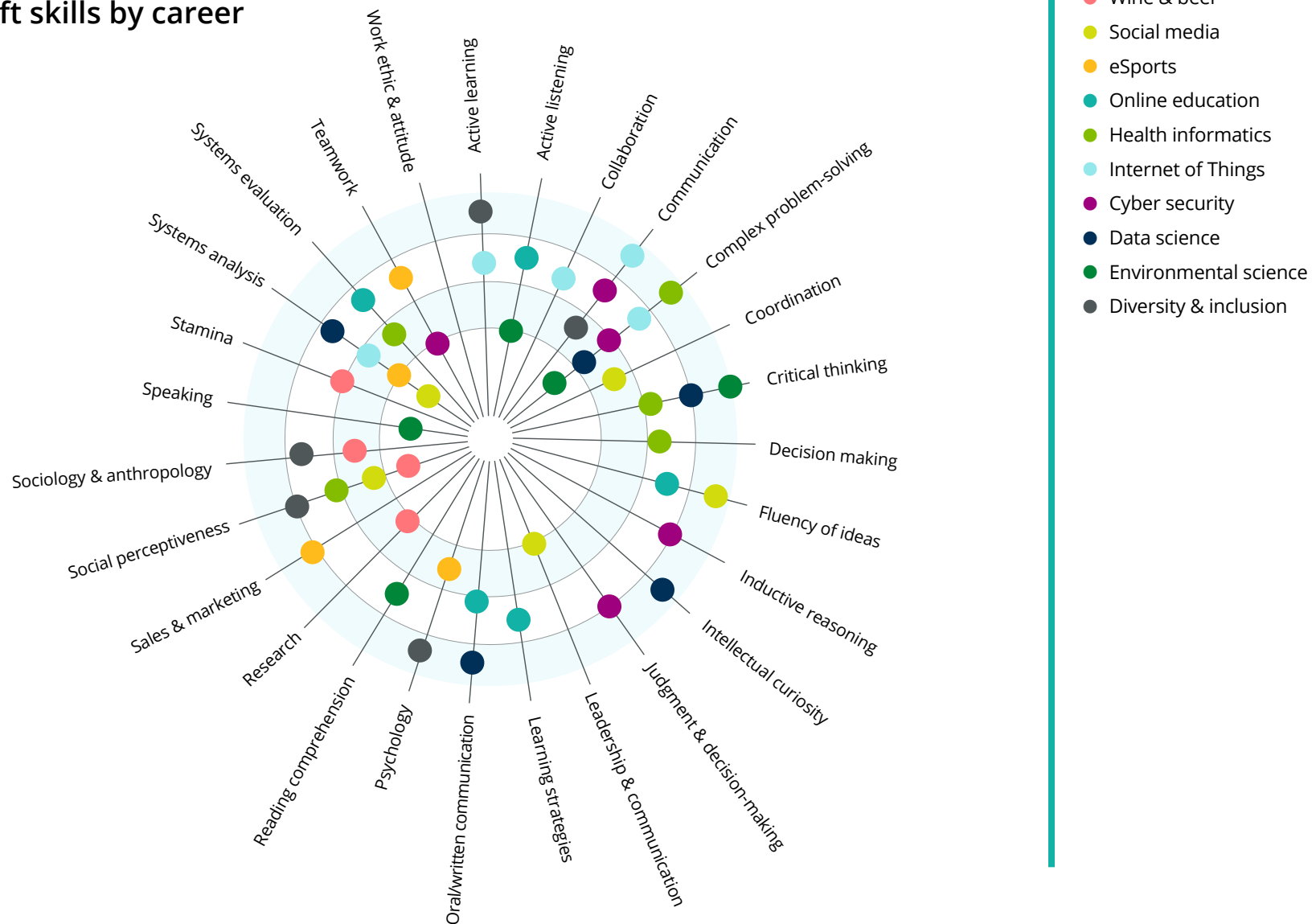
And finally, the need for expertise in the areas of environmental and social sustainability is on the rise, bringing about an increase in specialized degree programs in both **environmental science** and **diversity & inclusion**.



# Careers in Comparison

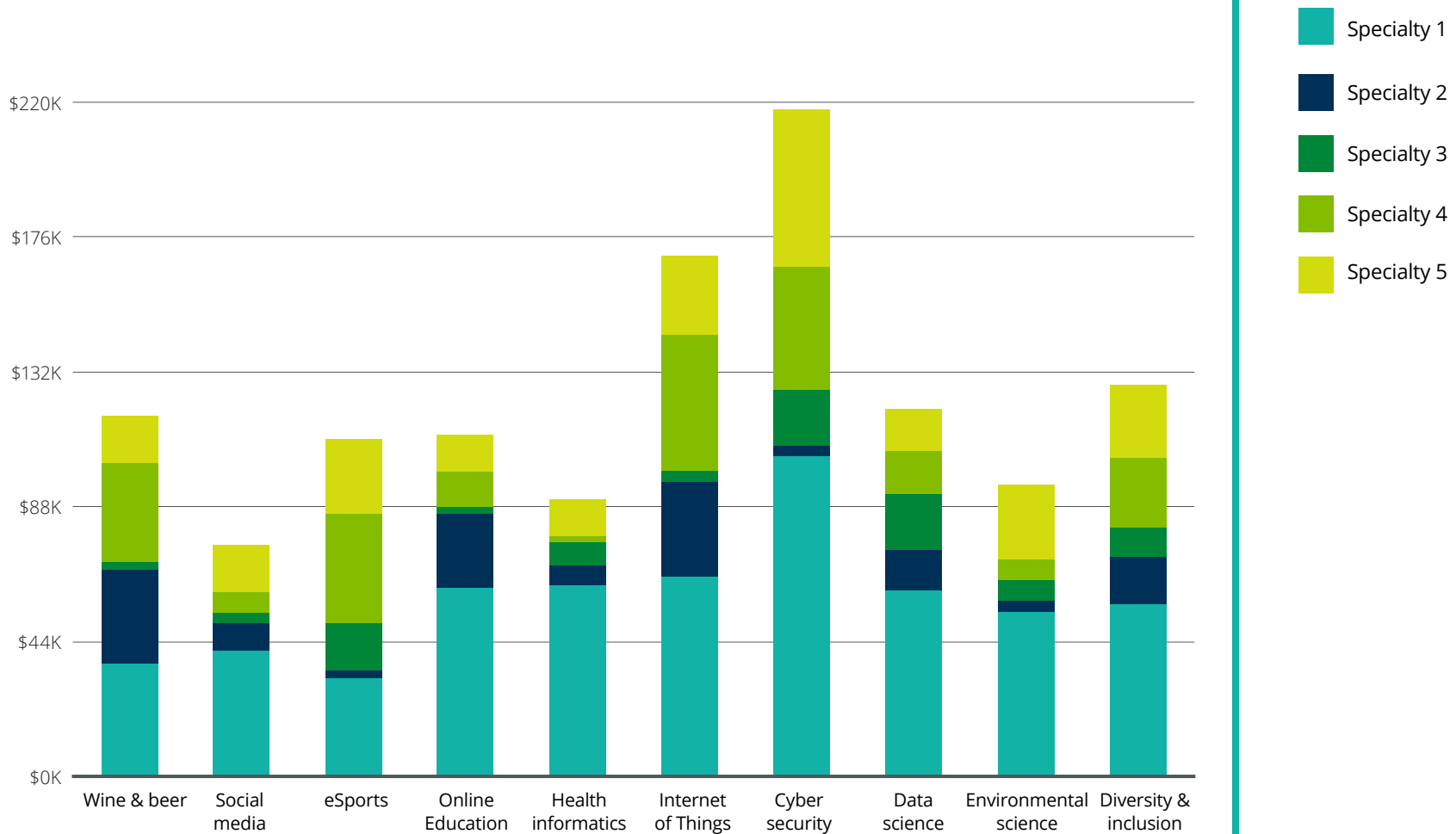
See how these ten fields stack up against one another in terms of necessary skills and potential income.

## Top soft skills by career



## Income Potential

Average income in 2021 for each career specialty included in the following fact sheets.





# Wine & beer

The wine and beer industries are not new. People have been studying the production and use of fermented beverages for thousands of years. Throughout much of that time, education came through apprenticeship and then certification. Now universities are starting to offer degrees, expanding the possibilities for job candidates in these industries.

Most who seek careers in beer and wine are driven by passion. While some start young — either in the labor-intensive lower tiers of the industry or by seeking formal training right away — others are career-changers looking to turn their hobby into a profession. Earnings that follow can vary greatly. Working for a small winery or craft brewery is not going to net as much as working for a major brand, but as health and sustainability trends move consumers toward quality over quantity, the number of boutique producers entering the market is increasing.<sup>(2)</sup> More new producers means more opportunities for those open to both the uncertainty and potential of a start-up.

## Skills of the field

### Technical skills<sup>(3)</sup>

- Viticulture/enology/fermentation
- Business/sales/marketing
- Laboratory skills
- Engineering
- Chemistry

### Soft skills

- Research
- Work ethic and attitude
- Social perceptiveness
- Sociology and anthropology
- Stamina

## Specialties<sup>(4, 5, 6)</sup>

**Winemaker** (\$85–\$150K)



**Sommelier** (\$55K–\$155K)



**Vineyard manager** (\$50K–\$85K)



**Brewmaster** (\$40K–\$100K)



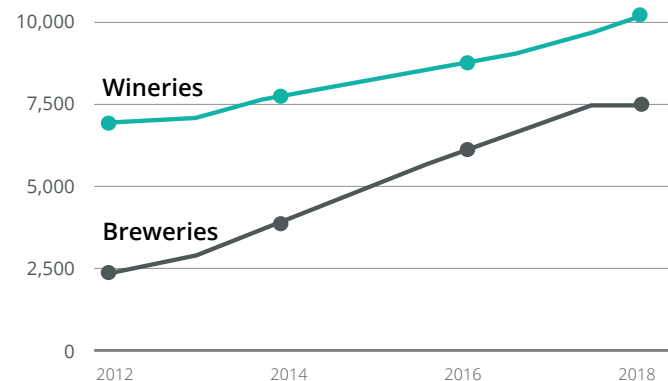
**Cellar manager** (\$35–\$40K)



\$0 \$25K \$50K \$75K \$100K \$125K \$150K \$175K \$200K

## Job growth

Total number of wine & beer producers in the United States.<sup>(7, 8, 9)</sup>

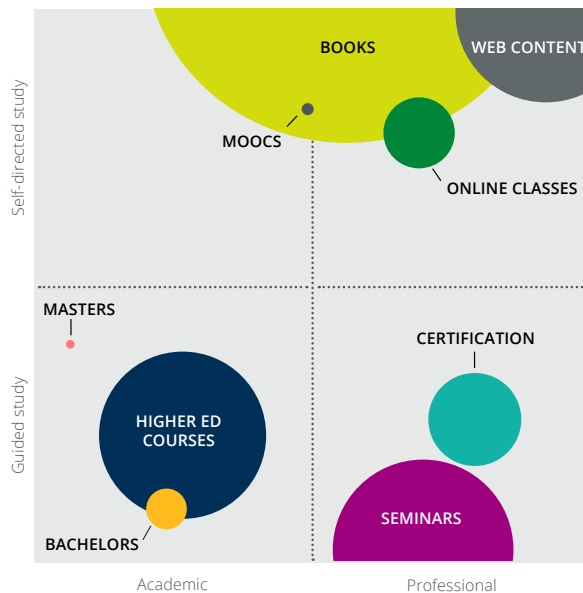


## Study options available

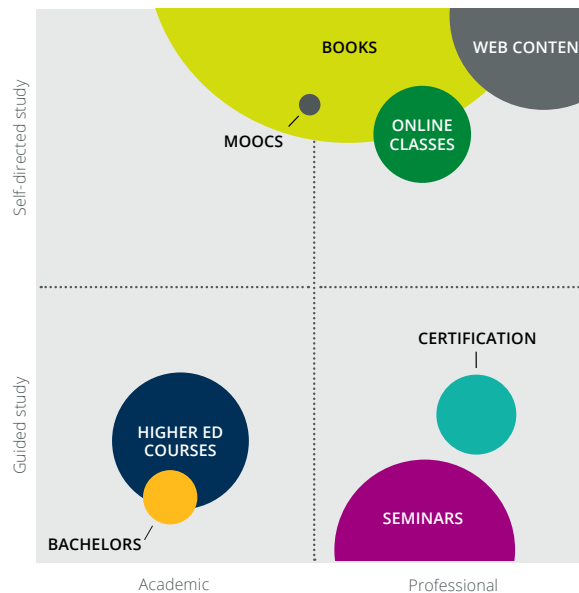
Between the field and the pour, there are many ways to specialize in the wine and beer industries, and expectations for applicants' experience and background will vary. Those willing to start at the lowest tier of wine and beer work — in the field or in the cellar — will learn a lot on the job. At the business and sales end, industry knowledge is crucial, but traditional degrees often suffice.

Those looking to specialize as brewmasters, enologists, or sommeliers, however, are going to need certifications and proven dedication to understanding the science, taste, and history of their product. University degrees are increasingly a way to gain the necessary academic foundation. There are numerous bachelors and a few masters options in the US, and even some PhDs for those willing to go international.

### Wine education options



### Beer education options



## Insider advice

"My hunch is that as time goes on, the educational requirements of microbrewers in the US will increase, if for no other reason than that the demand will increase. One microbrewery owner I spoke with recently declared he will never again hire another brewer without formal training...or a lot of experience."

– "How to go pro in the beer biz", **Teri Fahrendorf**<sup>(10)</sup>



# Social Media

Outside of direct employment by social platforms, most social media jobs are simply contemporary marketing jobs with a focus on the fastest growing channel for marketing content. Because of this, the types of jobs available align closely to marketing jobs (manager, strategist, specialist, etc.). Smaller employers often have a single social media expert oversee the full strategy, implementation, and management of their social accounts, while larger employers may have a team of specialists, each dedicated to a subject like brand awareness or community engagement.

Then there are the content creators — the bloggers, the designers, the podcasters, and, yes, the influencers. These creatively focused individuals work directly with marketers or they may be self-employed and in control of their own brand.

Income potential for positions in the marketing world largely depends on experience, and consultants with proven successes and multiple clients may bring in even higher paychecks. Content creation earnings vary wildly, depending on the particular content niche (finance, travel, and fashion will net you more than cooking, politics, or religion), the years put in, and the strategic know-how.<sup>(11)</sup>

## Skills of the field

### Technical skills<sup>(12)</sup>

- Digital marketing
- Technological proficiency
- Project management
- Data analysis
- Writing

### Soft skills<sup>(13)</sup>

- Social perceptiveness
- Coordination
- Fluency of ideas
- Systems analysis
- Leadership & communication

## Specialties<sup>(11, 14, 15)</sup>

### Social media strategist (\$35–\$72K)

\$54

### Digital marketing manager (\$48K–\$103K)

\$76

### Brand ambassador (\$37K–\$46K)

\$42

### Community/engagement manager (\$33K–\$67K)

\$50

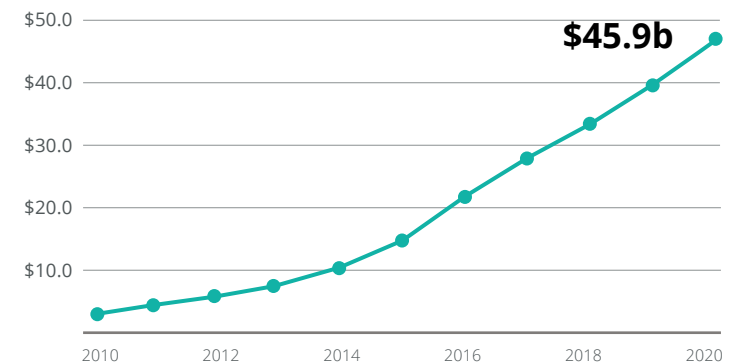
### Content creator (\$25–\$200K+)

\$44

\$0 \$25K \$50K \$75K \$100K \$125K \$150K \$175K \$200K

## Market growth<sup>(16)</sup>

Growing social platforms should lead to growing opportunities for social media jobs.



Social network market size in U.S. 2010–2020 (in billions of \$)

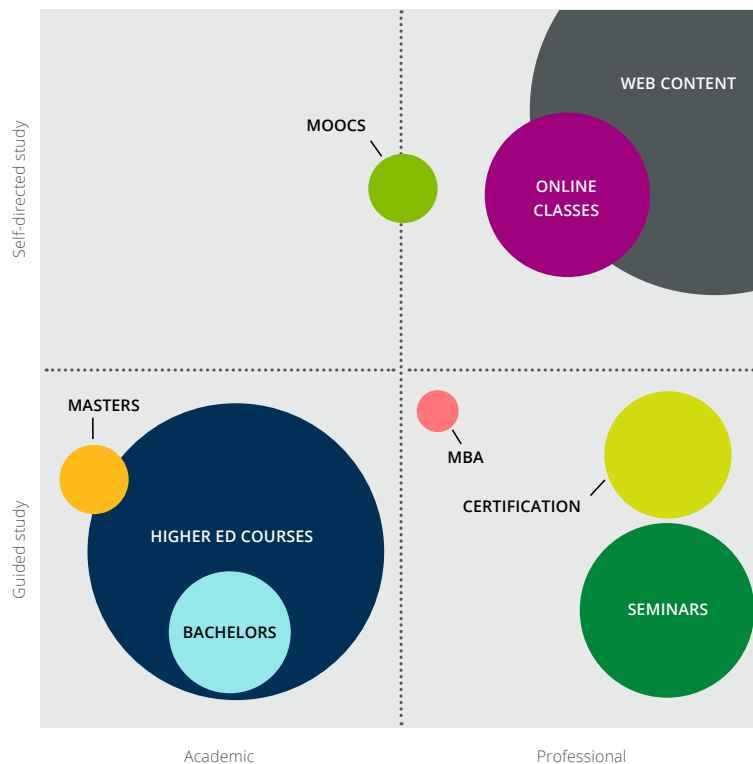


## Study options available

On top of traditional marketing and digital marketing degrees, there are a growing number of options with a full focus on social media. The majority of masters programs are — in the spirit of the subject — conducted online, and many bachelors programs follow the same model. One risk of targeting social media specifically is that the platforms are in constant flux, so prospective students should ensure the curriculum addresses the need to keep up with the trends.<sup>(17)</sup>

For those looking to add social media expertise to a marketing- or communications-focused résumé, there are plenty of online classes and certificate programs dedicated to social media business and strategy. These are also perfect for content creators looking to boost their technical skills as they work with businesses or build their own brand.

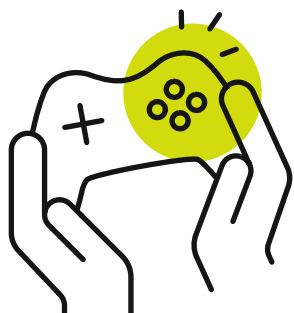
## Social media education options



## Insider advice

"You may have a presence on some of the more popular networking sites, but now it's time to use them professionally. Ditch the silly pictures and stories about your weekend, and showcase your expertise by creating meaningful content that gains followers and fans and kick starts your social media career in your own time."

– Michael Page, International Inc.<sup>(18)</sup>



# eSports

Gaming has been a thriving industry since the introduction of home consoles in the 1980s. The past decade has seen a rise in the integration of gaming into K-12 curricula as educators embrace its ability to support STEM learning and build soft skills like teamwork, communication, and problem solving.<sup>(19)</sup> Now that competitive gaming (eSports) is booming as a massive worldwide industry, universities are getting involved. Athletic departments are developing players through official varsity teams and, on the academic side, institutions are starting to design curricula for those interested in general eSports careers.

Just as with traditional sports, players in the sport can earn millions of dollars, but few reach that elite level. Those willing to trade some of the glory for more stable prospects will find numerous career options in the industry. Job sectors include strategists (analysts, coaches), content creators (developers, journalists, streamers), entrepreneurs (marketing, business development), and organizers (event work, IT support, managers).<sup>(20)</sup> The skills candidates need depend on the sector — many requiring a degree in that specialty — but all demand passion for games and competitions.

## Skills of the field

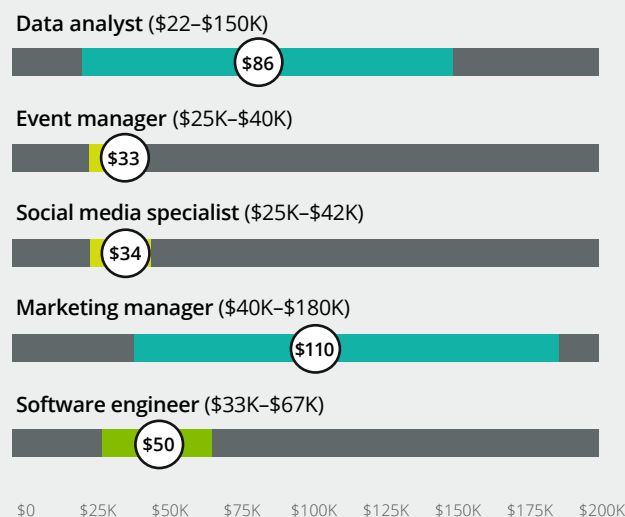
### Technical skills

- Gaming expertise
- Information technology
- Data analysis
- Digital media communication
- Business

### Soft skills

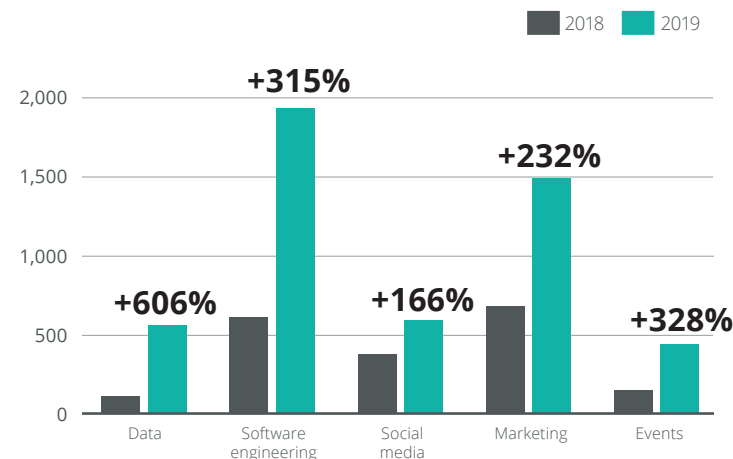
- Teamwork
- Sales & marketing
- Psychology
- Systems analysis

## Specialties<sup>(21, 22)</sup>



## Job growth

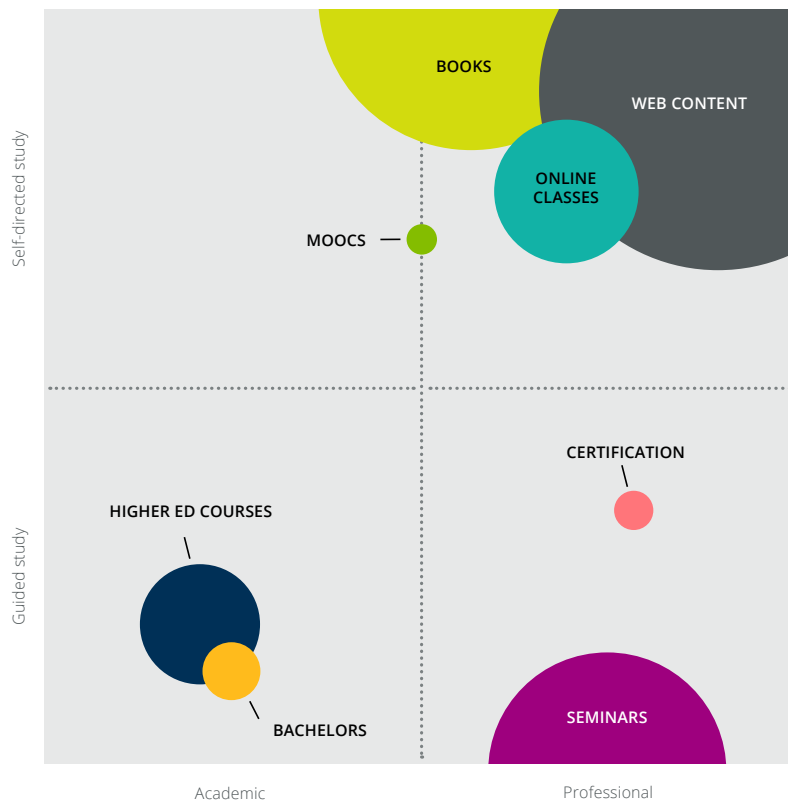
Total number of global eSports jobs (aggregated by Hitmarker 2018–2019)<sup>(23)</sup>



## Study options available

The eSports industry is growing so rapidly— from \$906 million in 2018 to a projected \$1.65 billion by 2021 — that formal education is working hard to catch up.<sup>(24)</sup> For now, the best path to a career outside of gameplay is to pursue an education in one of the specialties (software engineering, event planning, marketing, business, etc.), develop general eSports expertise through gameplay and tournament involvement, and build a portfolio of work through social media or volunteer event work. However, for anyone looking to establish themselves in the field with a specialized education, there are at least 10 American universities offering undergraduate degrees in eSports — primarily focusing on eSports management — and at least a couple universities also have a masters curriculum currently in development.

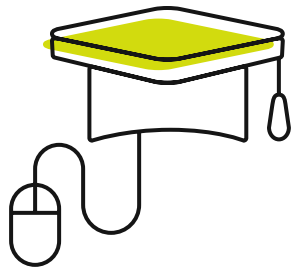
## eSports Education options



## Insider advice

"Social media is great for networking, but nothing replaces face to face communication... Even if your budget is tight, commit to making it to as many events as possible. Politely introduce yourself to influencers who are relevant to your career goals. Don't be shy. Attend the parties. Gather business cards. Ask questions. Make friends."<sup>(25)</sup>

– **Jason Lake**, Founder & CEO of @compLexity



# Online education

While online learning was once seen as an inferior educational option, it's quickly evolved into a reputable alternative to traditional models of education, and possibly the primary model of the future. Virtual schooling and online professional training provide learners with flexible options in a near endless array of courses that can adapt to individuals' needs. As the industry continues to evolve, there's a high demand for job candidates with expertise in designing, teaching, and managing courses specifically for an online environment.

In the world of formal education, some educators specialize in online instruction, but many are traditional classroom teachers delivering a limited number of courses virtually. In this case, institutions employ instructional designers (titles vary) to support teachers in digital course design and implementation. In the corporate world, training specialists often take on multiple roles — both developing and implementing the instruction. And serving each of these online learning models are software developers who create the learning platforms, applications, and tools that are the backbone of online education.

## Skills of the field

### Technical skills

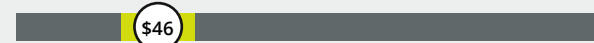
- Multimedia development and content management software
- Teaching
- Project management
- Content and curriculum development
- Graphic design

### Soft skills<sup>(30)</sup>

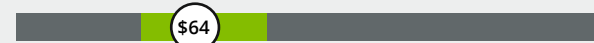
- Oral/written expression
- Learning strategies
- Systems evaluation
- Fluency of ideas
- Active listening

## Specialties<sup>(26, 27, 28)</sup>

### Online teacher (\$33–\$58K)



### Instructional designer/technologist/coordinator (\$45K–\$82K)



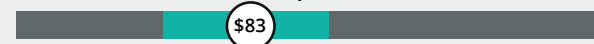
### Training and development specialist (\$45K–\$86K)



### Curriculum director (\$47K–\$105K)



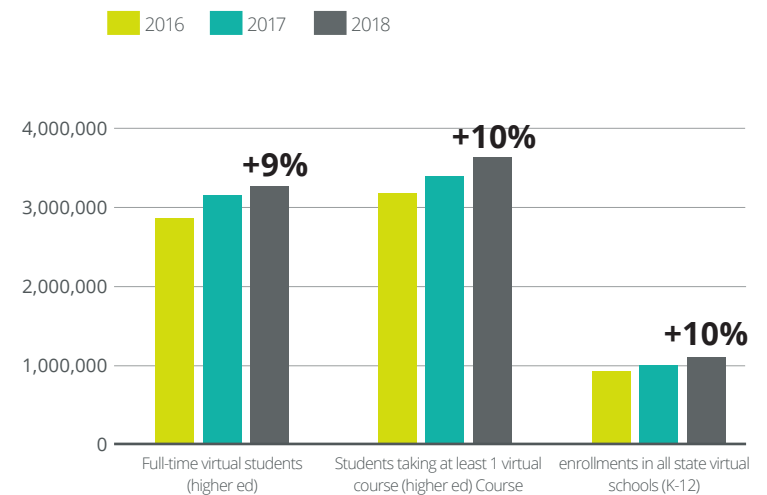
### Educational software developer (\$58K–\$107K)



\$0 \$25K \$50K \$75K \$100K \$125K \$150K \$175K \$200K

## Industry growth

Virtual school and online course enrollment 2016–2018.<sup>(29, 30, 31)</sup>



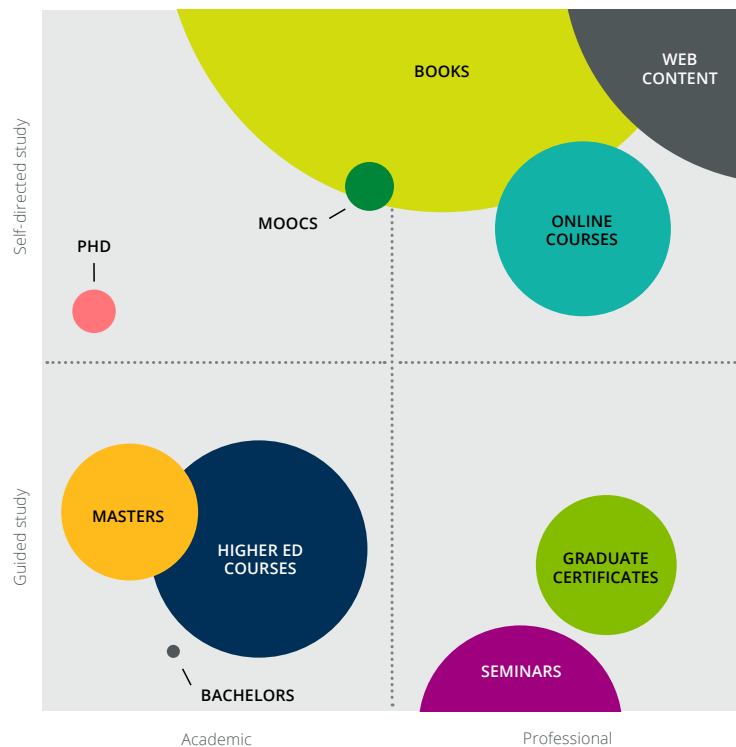


## Study options available

For teachers, the undergraduate path and credentialing requirements that apply to educators in a brick and mortar institution also apply to those who exclusively teach in an online environment. Very few edtech bachelors degrees exist (though education majors may choose a technology concentration). Edtech study is largely at the graduate and professional level, and many teacher, technologist, and trainer positions require a master's degree or PhD. To get started in the field while pursuing an advanced degree, online tutoring and adult education roles can give relevant, entry-level experience.

This is not to say there aren't paths for career-changers with applicable on-the-job experience, particularly at the corporate level. Those who've acquired the necessary foundations in design thinking and learning theory, and who also have strong project management skills and vast technical knowledge, will be strong candidates.

## EdTech Education options



## Insider advice

"Be leery of a graduate degree program that teaches you how to use certain tools. I don't think software training belongs in a graduate program, especially when people in the real world learn the software on their own for free. Your education should equip you to diagnose performance problems and help people change what they do; you shouldn't pay thousands of dollars to have an instructor tell you which buttons to click unless you're in a certificate program specifically designed to teach you a tool."<sup>(32)</sup>

– Cathy Moore, eLearning and training consultant



# Health informatics

Health informatics involves the digital management and analysis of healthcare information.<sup>(33)</sup> While this subset of the medical field has been around for some time, it's skyrocketed in the past decade with advances in technology, an aging population, and the introduction of the Affordable Care Act, which has a goal of leveraging technology to improve health outcomes. Practitioners in the field — who combine expertise in computer science, information science, and healthcare — support patients with digital systems that give them access to their own health data, allow coordinated care teams to share data, and support the identification of larger public health trends.<sup>(34)</sup>

Those looking to enter the field can take a number of paths. Clinical and IT roles vary depending on the size and nature of the institution, but often they establish or manage the technological systems being used for patient care. Nurse informatics more specifically addresses how technology and data can support and improve nurses' workflow. And for the most analytically minded, public health informatics focuses on connecting and interpreting data for practitioners to serve larger communities (most recently, this includes efforts such as COVID-19 contact tracing). Additional sub-specialties exist in pharmacology and imaging.<sup>(35,36)</sup>

## Skills of the field<sup>(37, 38)</sup>

### Technical skills

- IT principles
- Programming
- Health data systems
- Ethical & legal issues
- Systems life cycle management

### Soft skills

- Decision-making
- Complex problem-solving
- Social perceptiveness
- Systems evaluation
- Critical thinking

## Specialties<sup>(39)</sup>

### Health informatics specialist (\$41–\$95K)



### Clinical analyst (\$48K–94K)



### Clinical informatics specialist (\$52K–107K)



### Informatics nurse (\$58K–\$98K)



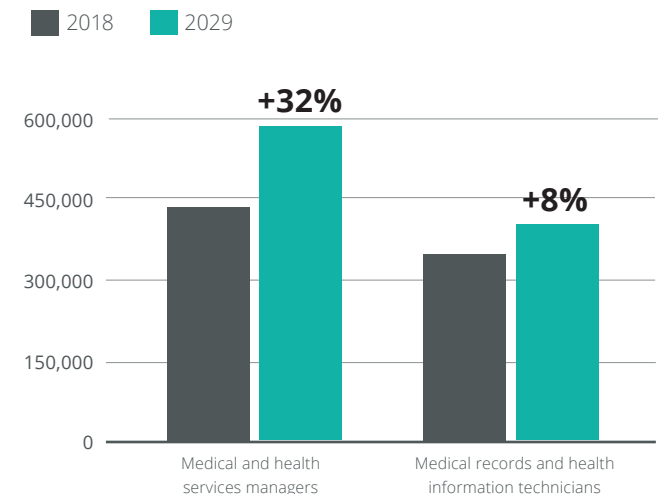
### Clinical informatics manager (\$62–\$128K)



\$0 \$25K \$50K \$75K \$100K \$125K \$150K

## Job growth

Employment projections, 2019–2029<sup>(40)</sup>

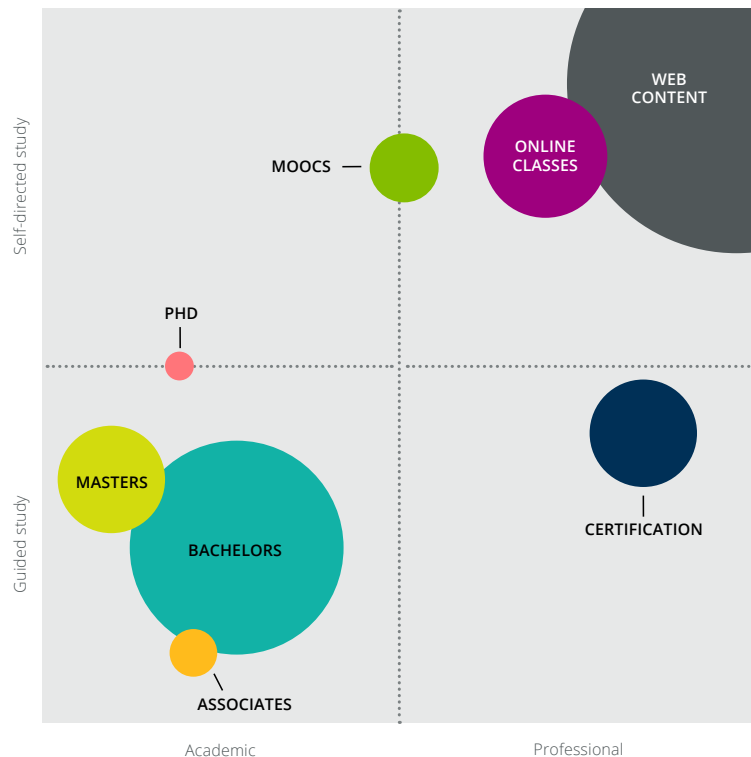


## Study options available

Because demand is high for qualified health informatics practitioners, there's a proliferation of educational opportunities, and they cover almost all degree levels with a range of financial and time commitment (both traditional and online). Options also vary depending on the individual's background—with additional paths available to those who have experience in the medical field.

Working healthcare professionals may only need to pursue an informatics certificate to make a career shift. Those entering the field from the ground floor (or laterally from the technology industry) will find options for associate, bachelors, and masters degrees. An associate degree is suitable for those interested in technician or assistant roles, while a higher degree is recommended for a specialist, administrative, or managerial path. There are even a small number of PhD options for those interested in specialized research, academia, or systemic innovation<sup>(41, 42)</sup>

## Health informatics education options



## Insider advice

"There are masters degree programs in informatics, of course, but you can begin with learning on the job. Also, it's important to understand that informatics is more than just IT. Informatics also means having an understanding of nurses' workflow, how and why they do what they do, and how electronic documentation can enhance or hinder patient care and nurse efficiency and function."

– Vivian Mae A. Diaz, RN, BSN<sup>(43)</sup>



# Internet of Things

Many modern conveniences of everyday life now resemble the science fiction fantasies of just a couple decades ago. This speaks to how much people have come to accept and rely upon the Internet of Things (IoT). The IoT is the network of physical objects that are embedded with sensors or software to connect and exchange data with the internet. This includes products such as wearable fitness trackers, home automation devices, self-driving cars, and much more.

The demand for these devices is staggering, with an estimated 35 billion devices connected worldwide in 2021 — a 16% increase in just one year.<sup>(44)</sup> Although investment and development may have slowed during quarantine, COVID-19 is set to spark further growth. More time at home means more people connecting their homes for health, wellness, and efficiency, and the healthcare industry is leveraging smart tech for tasks like early detection and contact tracing.

While the IoT demands a specialized skill set, career potential in the field covers a wide range of options since it is not an insular industry. It fulfills the demands of other distinct industries, opening up job prospects in sectors of consumer electronics, transportation, manufacturing, utilities, agriculture, and healthcare.<sup>(45, 46)</sup>

## Skills of the field<sup>(46)</sup>

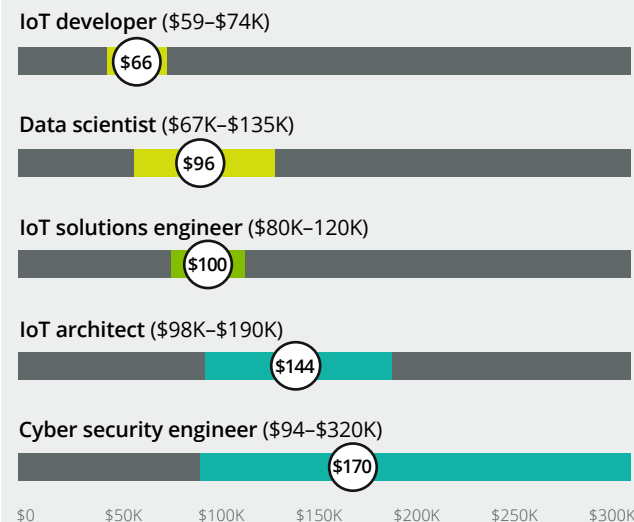
### Technical skills

- Embedded software development
- Wireless networking
- Data and AI
- Programming
- Cyber security

### Soft skills

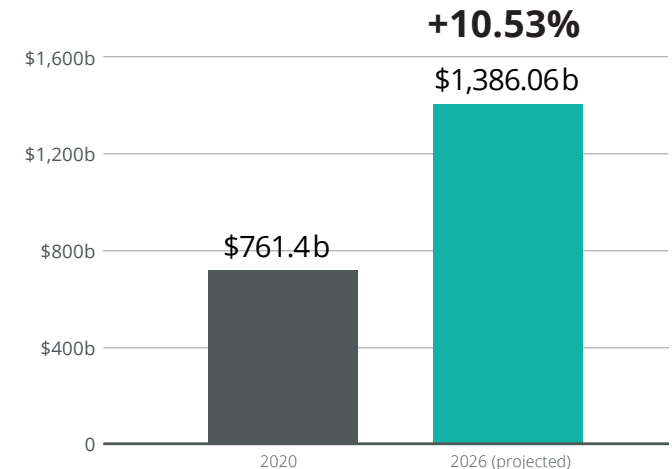
- Active learning
- Communication
- Collaboration
- Complex problem-solving
- Systems analysis

## Specialties<sup>(47, 48)</sup>



## Market growth

IoT global market value today vs. projected growth.<sup>(49)</sup>



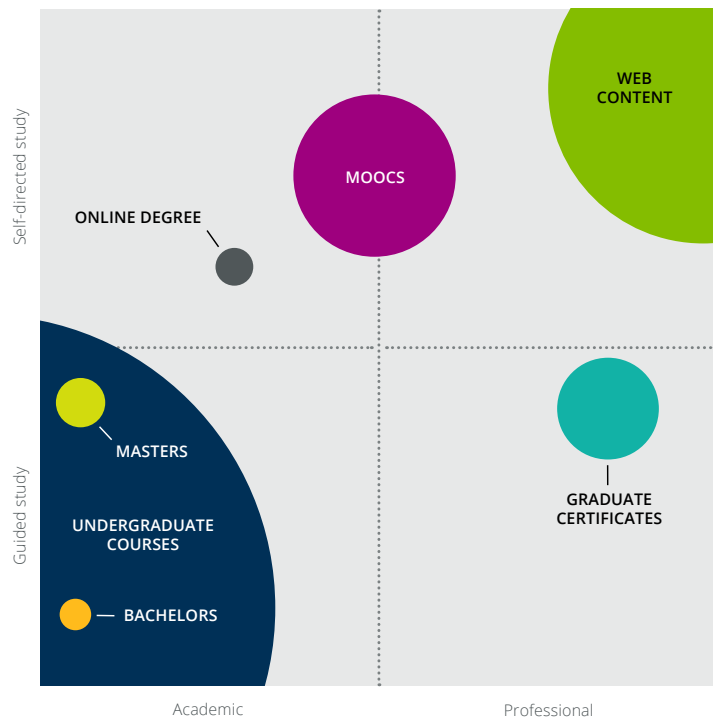


## Study options available

While there are only a couple US colleges offering a bachelor's degree specific to IoT, the rise in options internationally indicates that number will likely increase soon. In the meantime, for many entry-level roles, a bachelor's in information technology, computer science/engineering, or software development may suffice. Learners can set themselves up for job search success by researching the competencies expected by their dream employers and planning their course work accordingly.<sup>(50)</sup>

Master's degrees, micro-masters, and graduate certificates specific to the IoT are increasingly common. These programs may go by alternate labels such as "embedded systems" or "cyber-physical systems". This includes innovative research universities like Northeastern University, which has also established the Institute for the Wireless Internet of Things. As with bachelor's options, doctoral programs haven't really hit the US yet, but those interested in the data science sector of the industry may benefit from a PhD in analytics or another similar specialty. At all levels (engineers and architects in particular), professional certifications may be a requirement.

## Internet of Things education options



## Insider advice

"Without a doubt, the versatile nature of the IoT is one of the numerous reasons it is due to add such significant value to the economy. IoT devices can be implemented in every industry, through adoption, development or both. In this respect, you should learn to collaborate with people from distinct sectors. Make sure your training is diverse so that you can apply it to numerous businesses."

– "10 Tips For Women Who Want To Pursue A Career In IoT", Home Security List<sup>(51)</sup>



# Cyber security

Data and digital technology are no longer self-contained industries, but vital parts of almost every industry there is. And as businesses go digital, so too do our intellectual property and personal information. Properly protecting this data is essential. Cyber security encompasses everything that relates to the protection of data and networks, and expertise in the field so in demand that qualified candidates are practically guaranteed work.

Cyber security employment can be found in a wide range of industries and focuses on a number of specialties. Information security analysts plan and carry out security measures; forensic roles deal with the aftermath of data breaches; penetration testers identify vulnerabilities to help prevent breaches; security architects establish and maintain network security; and the CIO sits at the top tier of the industry, overseeing all of this.<sup>(54)</sup>

For each career pathway there's a lot of technical knowledge and many certifications to acquire to demonstrate mastery, so it's best for aspiring cyber crime fighters to research each specialty early and get on track for the role that best fits their skill set and goals.

## Skills of the field

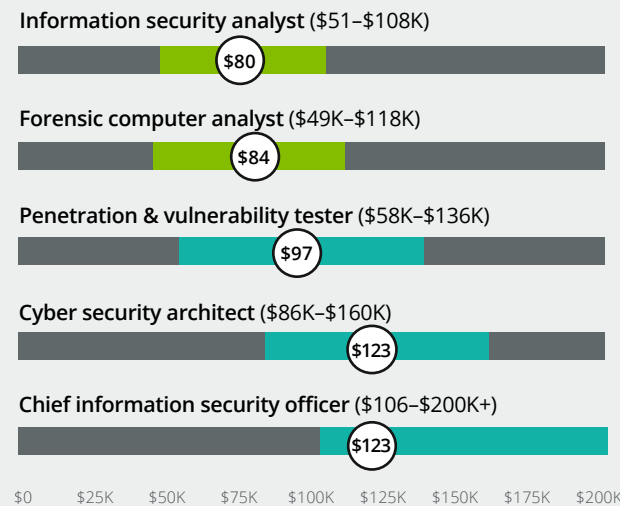
### Technical skills

- Information technology
- Operating system architecture, administration, & management
- Programming
- Risk analysis & mitigation
- Security tools

### Soft skills<sup>(52)</sup>

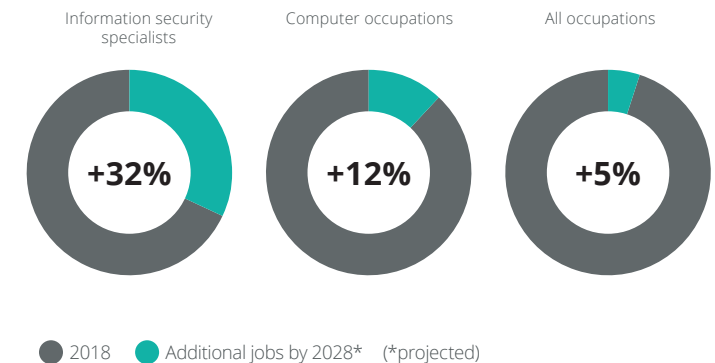
- Communication
- Teamwork
- Judgment and decision-making
- Complex problem-solving
- Inductive reasoning

## Specialties<sup>(52, 53, 54)</sup>



## Job growth

Projected growth for cyber security jobs vs general computer occupations and overall national job growth, United States 2018–2028.<sup>(55)</sup>

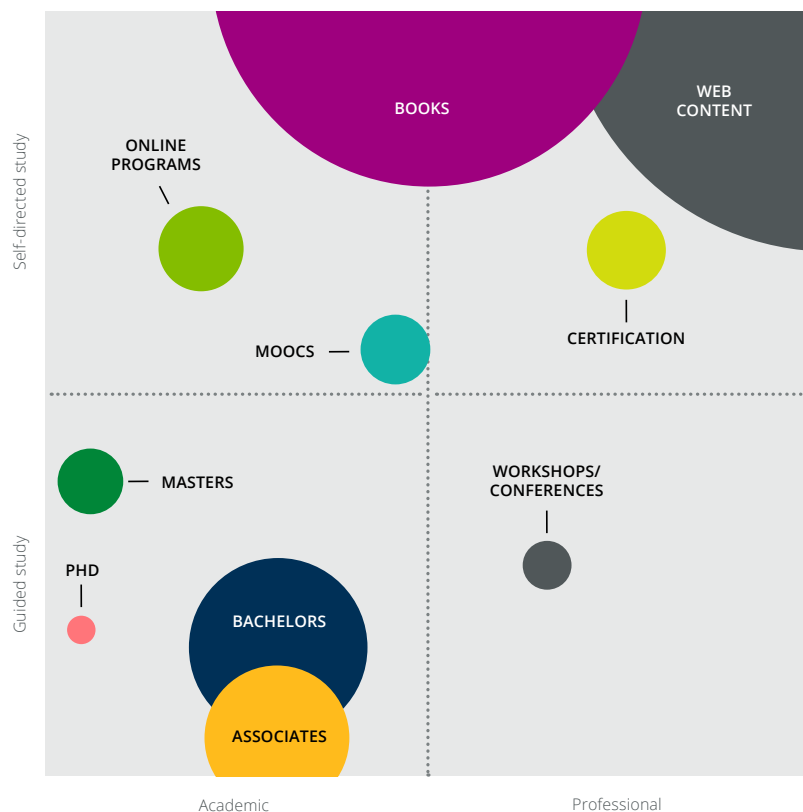


## Study options available

Most entry-level cyber security positions require only an undergraduate degree (which degree may not matter if you have the right skills and certifications), but a graduate degree will open the door to more senior positions and quicker advancement. Increasingly, schools are offering degree programs specific to cyber security (represented in the chart below) that students can pursue rather than the more broad “computer science”.

No matter what degree a candidate boasts, their prospects may be further improved by adding professional certifications to their résumé. In fact, many job postings will require that prospects come to the table with at least a foundational certification, or will ask employees to acquire further credentials for career development.<sup>(56)</sup>

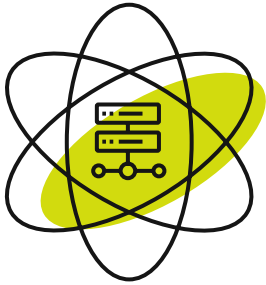
## Cyber security education options



## Insider advice

“Anyone interested in cybersecurity needs to get a degree, as going to college helps you to learn how to learn. No one in IT or security has all the answers, but what defines us as IT and security folks is how we figure out problems. You learn how to become a lifelong learner in college and develop new skills on the job as you fine tune your natural gifts.”<sup>(57)</sup>

– Charles Poff, CISO, Salespoint



# Data science

Love it or fear it, big data is everywhere, and it's about more than just serving up unnervingly targeted ads. In addition to shaping the retail industry, big data is a cornerstone of healthcare, banking, agriculture, government, transportation, and energy. It's estimated that humans produce 2.5 quintillion bytes of data daily.<sup>(58)</sup> That figure is only going up, which has led to the growing demand for data scientists.

As with any young industry, the job description for a data scientist can be vague and may vary greatly by industry or company. Generally, data scientists have mixed expertise in computer science, mathematics, and trend spotting.<sup>(59)</sup> They're needed to create algorithms, identify trends, organize data, produce insights that drive business decisions, and design machines that can automate output based on data.

From 2016 to 2019, "data scientist" held the top spot on Glassdoor's list of "50 Best Jobs in America". For the past two years, the job has ranked second. This small drop may speak to the temporary effects of COVID-19 or may simply reflect the need for front-end developers, but either way, data science remains in high demand with continued projected growth.<sup>(60)</sup>

## Skills of the field

### Technical skills

- Programming (Python, R, and SQL)
- Cloud architecture
- Performance marketing
- Mathematics
- Probability and statistics

### Soft skills<sup>(61)</sup>

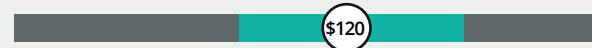
- Critical thinking
- Oral/written expression
- Complex problem solving
- Intellectual curiosity
- Systems analysis

## Specialties<sup>(62)</sup>

**Data analyst** (\$44–\$86K)



**Data architect** (\$77K–\$156K)



**Data engineer** (\$65K–\$132K)



**Statistician** (\$52K–\$109K)



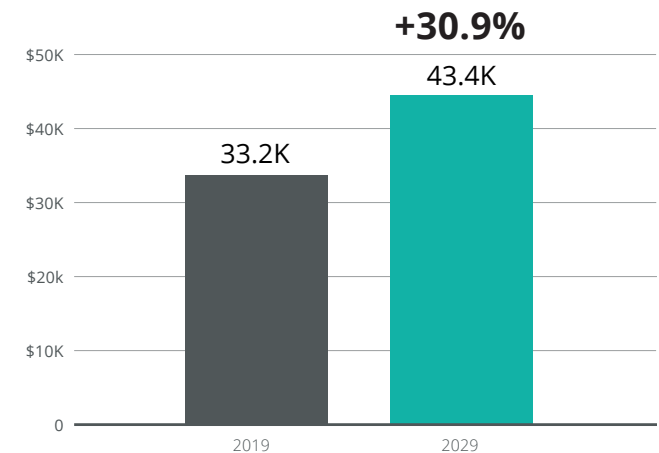
**Machine learning engineer** (\$76–\$154K)



\$0 \$25K \$50K \$75K \$100K \$125K \$150K \$175K \$200K

## Job growth

Data scientists and mathematical science employment, 2019 and projected 2029<sup>(63)</sup>





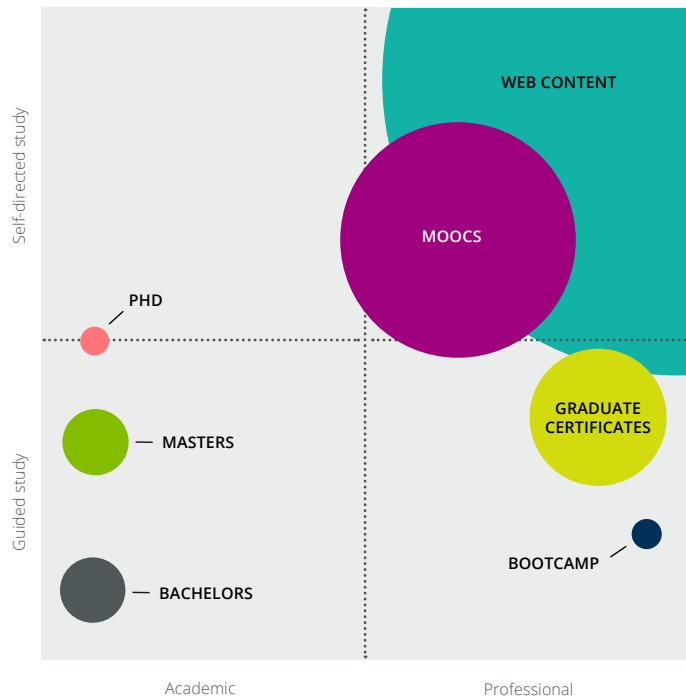
## Study options available

Compared to other emerging careers, data science has fairly rigorous academic requirements for entry. A competitive field means employers can make higher demands for education, and the array of technical skills required will demand intensive study, whether formal or informal.

A good starting point is a bachelor's degree in computer science, mathematics, IT, or statistics. Increasingly, as shown in the chart below, degrees specific to data science are available as well. This also goes for master's degrees, which are held by 73% of professionals in the field. As many as 38% have a PhD.<sup>(64)</sup>

However, those with a more mixed background still have a chance. In fact, since the field is new, many of its leaders didn't have today's focused degree options. Applicants may stand out if they can demonstrate that they've supplemented coursework with real-world projects, if they have additional expertise in the job's broader industry (i.e., healthcare, marketing, etc.), or if they can show that they've targeted their studies to fit the demands of the role they're looking to take on.

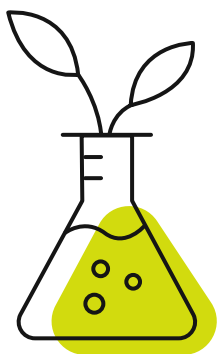
## Data science education options



## Insider advice

"Instead of fixating on a single technique or programming language, ask yourself, what is the best set of tools or techniques that will help you to solve your problem? Focus on problem solving, and the tools will come naturally."

– Robert Chang, Data @Airbnb<sup>(65)</sup>



# Environmental science

The state of the environment, the preservation of natural resources, and the health of humans and wildlife are important topics of conversation these days for government, businesses, and individuals alike. The collective desire to “go green” is growing significantly, and at the head of this movement are environmental scientists and technicians dedicated to identifying, studying, and ultimately finding solutions to today’s environmental challenges.

Careers in this innovative field can follow a number of possible trajectories. Technicians have more flexible educational requirements. They may split their time between the lab and field, monitoring the environment, collecting data, and upholding regulations.<sup>(66)</sup> Scientific and engineering roles are more academically demanding, requiring rigorous interdisciplinary study — and the resulting knowledge of multiple branches of science and a focus on problem-solving will open up a variety of career opportunities.<sup>(67)</sup>

Whether going the technician route or the scientific route, job prospects in this field are great, and the demand for green expertise is only growing.

## Skills of the field<sup>(68)</sup>

### Technical skills

- Biology/chemistry/physics
- Mathematics
- Law
- Administration
- Information technology

### Soft skills

- Active listening
- Critical thinking
- Reading comprehension
- Complex problem solving
- Speaking

## Specialties<sup>(69)</sup>

### Environmental science & protection technician (\$29–\$80K)



### Environmental engineering technician (\$32K–\$83K)



### Conservation scientist (\$41K–\$87K)



### Zoologist/wildlife biologist (\$40K–\$102K)



### Environmental engineer (\$53K–\$137K)

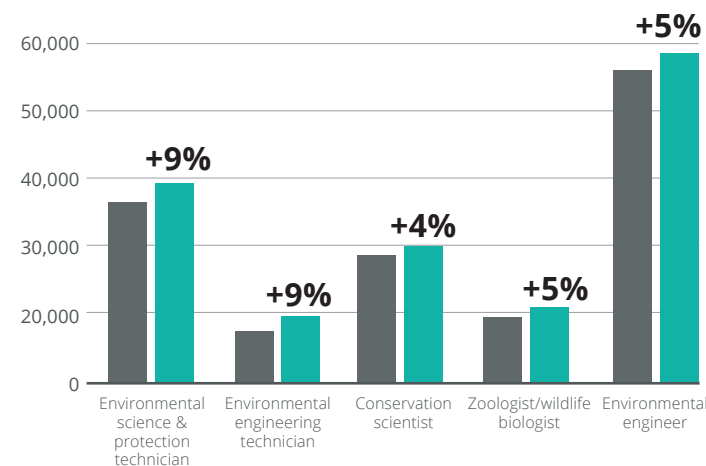


\$0 \$25K \$50K \$75K \$100K \$125K \$150K \$175K \$200K

## Job growth

Total number of environmental science jobs in the United States 2018–2028.<sup>\*(70)</sup>

■ 2018 ■ 2028\* (\*projected)

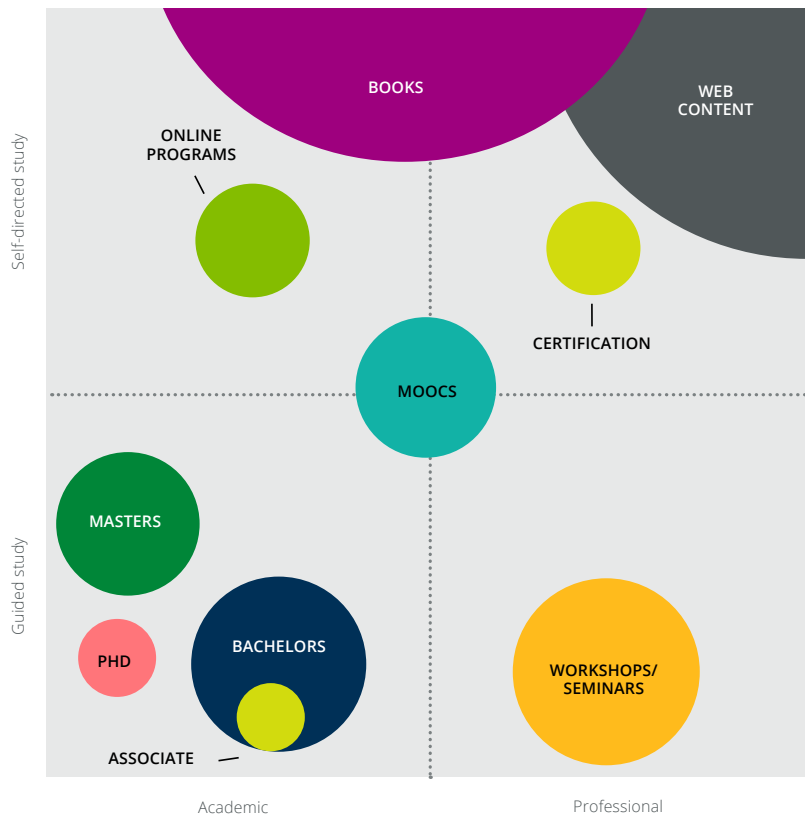


## Study options available

For the most part, anyone looking to break into the green industry is going to need a degree. At the technician or support level, an associate degree or graduate certificate may be enough to land a job. For scientific roles, a cross-disciplinary environmental science degree is great, but a specific concentration or minor will be helpful in pursuing specialized opportunities. Candidates with masters will be even more competitive.<sup>(71)</sup> If a research or academic role is the goal, a PhD could be required.

Even without an undergraduate degree in the sciences, it's still possible to pursue a postgraduate degree or certification work that may open up opportunities in the field. At any level of education, enthusiasm and a history of volunteer work in the field can be important in making a résumé stand out.<sup>(67)</sup>

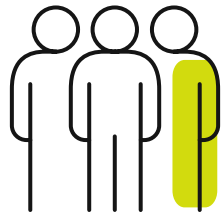
## Environmental science education options



## Insider advice

“Environmental people sometimes focus only on the final outcome of their work, but job seekers may be better served by paying attention to daily activities. What do you want to actually do all day? Do you want to write, organize, research, do scientific data gathering, or something else? Think in terms of verbs and you’ll know a lot about whether you’ll be competitive for a job.”<sup>(72)</sup>

– **Kevin Doyle**, Executive Director of Career Development, Yale University School of Forestry and Environmental Studies



# Diversity & inclusion

One of the more remarkable things about the year 2020 is that it will be remembered for more than *just* a global pandemic. It was also the year in which the demand for civil rights, equality, and justice in the US became more insistent than any time since the 1960s.

In the past few years there's been a growing demand for equality and representation. As a result, more companies are championing the need for diversity and inclusion (D&I) in the workplace and hiring specialists to help them meet that need.

In a 2018 column for Inclusion at Work, Jennifer Kim noted that taking on a D&I role comes with significant risk, as they're often the first cut in an economic downturn.<sup>(73)</sup> This prediction held true at the onset of COVID-19 when job postings plummeted. However, just months later, the US saw widespread civil rights protests in the wake of George Floyd's death, and D&I job postings did a quick about-face.

There's hope right now that roles supporting D&I are newly focused on action over awareness. Examples include GE, which pledged \$10 million toward racial justice and inclusivity initiatives, and Salesforce, which committed to increasing Black representation, especially in leadership.<sup>(74)</sup> The rebounding of job postings is also a positive sign of change. Each of the roles included below supports employers' mission of attracting, developing, retaining, and supporting the advancement of a diverse workforce.<sup>(75)</sup>

## Skills of the field

### Technical skills<sup>(76, 77)</sup>

- Inclusion strategy
- Human resources
- Change management
- Community outreach
- Strategic planning

### Soft skills

- Social perceptiveness
- Verbal/written communication
- Active learning
- Psychology
- Sociology/anthropology

## Specialties<sup>(74, 76, 78)</sup>

**Chief diversity officer** (\$75–\$211K)



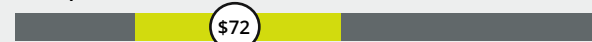
**D&I director** (\$89K–\$120K)



**D&I manager** (\$55K–\$124K)



**D&I specialist** (\$46K–\$118K)



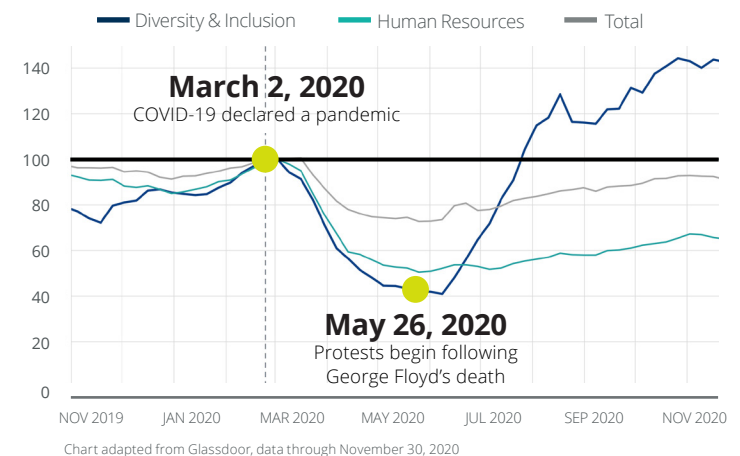
**D&I coordinator** (\$25–\$102K)



\$0 \$25K \$50K \$75K \$100K \$125K \$150K \$175K \$200K

## Job growth<sup>(79)</sup>

Diversity & inclusion job openings, November 2019 – December 2020. Job openings on Glassdoor, indexed to 100 for March 2, 2020.



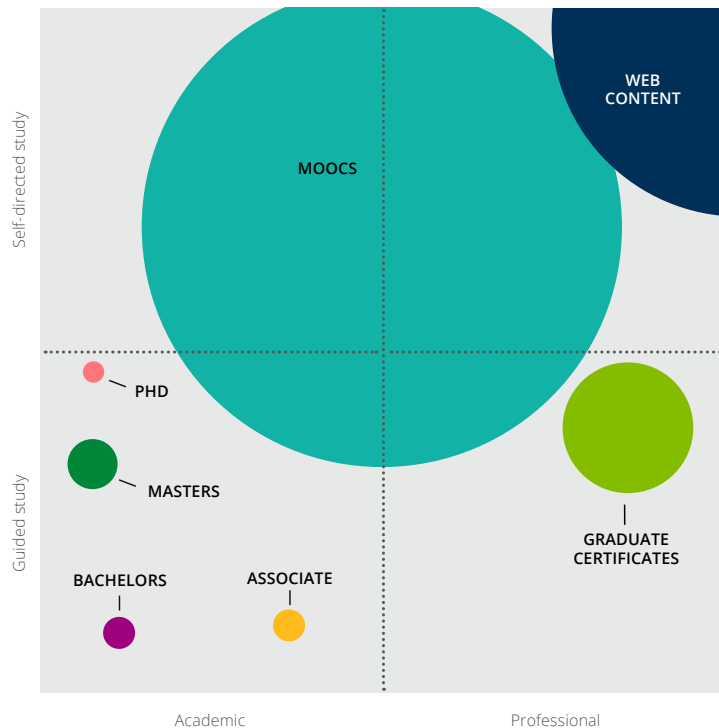


## Study options available

Options for a degree specific to D&I are limited, but available. Some institutions, such as Tufts University and The University of Kansas, have developed master's degrees in D&I leadership. However, most D&I job applicants come from a wide range of backgrounds. Some studied and worked in business or human resources management, choosing to specialize along the way. Some transitioned from other areas of their organization, driven by passion and seeing the need for this role. For them and others, there is a proliferation of graduate certificate and online course options that support D&I development.

It's worth noting that while education demands are high for these roles — 45.6% hold master's degrees<sup>(77)</sup> — transferable skills and a demonstrable interest in social justice should not be discounted as qualifying factors. A number of institutions, such as Emporia State University, offer interdisciplinary degrees in subjects like ethnic, gender, and identity studies that will give candidates a social science foundation and help them stand out in the hiring process.

## Diversity & inclusion education options<sup>(80)</sup>



## Insider advice

"My number one advice for folks looking to get into diversity, inclusion, and belonging (DI&B) is to look at what they can do right now, within their sphere of influence, to create an inclusive culture. DI&B is a vast field, needing a multitude of skills and backgrounds. Consider how your skills translate to DI&B work and start doing that work before you ever have a DI&B title."

– **Allison Dingler**, Global DI&B Program Manager, Indeed<sup>(81)</sup>

# Careers in a post-pandemic landscape

In the wake of widespread impact to businesses from the COVID-19 pandemic, Generation Z and younger Millennials experienced their first recession in the workforce.<sup>(82)</sup> As workers have seen themselves divided into “essential” and “non-essential”, it’s natural for these generations (and all workers) to consider the opportunities and risks associated with their chosen career path.

While most of our previous data comes from stable 2019 labor sources, here are some indications for how these ten emerging careers are faring in the face of current economic challenges.

## **Wine & beer**

Wine and beer was undoubtedly hit the hardest by the COVID-19 pandemic. About 53% of liquor sales come from restaurants, all of which suffered major business interruption. But here’s the good news. From the first month of US stay-at-home measures to October of 2020, off-premise alcohol sales increased 21.8% over 2019 sales.<sup>(83)</sup> One of the major alcohol delivery platforms, Drizly, experienced a 350% boost in mobile sales for the year.<sup>(84)</sup> Another channel that presents opportunity for future business models is the curbside pick-up and delivery of alcoholic beverages. During the pandemic, 30 states expanded laws to allow take-out cocktails, wine, and beer from restaurants. Of these, five states and Washington, D.C. have passed laws to make this a permanent measure.<sup>(85)</sup>



As the country anticipates further challenges to the food and beverage industry, there’s a chance for those with creative business ideas to step up and rethink how wine and beer makers can leverage increased off-premise consumption to survive this and similar hardships.

## **Social Media**

Social media consumption was booming during the pandemic, with 18–34-year-olds using Facebook, Instagram, and WhatsApp 40% more than typical.<sup>(86)</sup> But what does this mean for the social media experts — the marketers and content creators — who leverage the platforms to share their message? On one hand, 8.2% of marketing jobs were eliminated between February 2020 and February 2021.<sup>(87)</sup> On the other hand, businesses are continuing to look for ways to adapt, and for many that may mean prioritizing digital channels for their marketing needs and customer interactions.

Those savvy with social media have the opportunity to take center stage and present strategies that use popular platforms for greater outreach with potential savings for their employers and clients.

## eSports

On the surface it may seem that the eSports industry would be invulnerable to the impact of COVID-19. Social distancing measures led to a surge in time spent gaming at home, and the temporary suspension of NBA, MLB, and NHL seasons made room for television networks like ESPN2 to broadcast eSports competitions for the first time. This increased exposure has been a great opportunity for eSports to grow its audience.

However, the industry has a significant event sector, and all in-person tournaments were either been canceled, postponed, or moved to an online format in 2020, resulting in financial losses from ticketing, concessions, media rights, and sponsorship. Ultimately, this loss was offset by the uptick in streaming and sponsorships, leading to an overall 14.5% increase for the year.<sup>(88)</sup> Still, eSports will need innovative individuals to solidify its financial future with alternate strategies for executing large-scale events when crowd restrictions are in place.

## Online education

According to UNESCO, the COVID-19 pandemic brought about school closures in the US for an average of 47 weeks.<sup>(89)</sup> Teachers and students at every level of schooling have had to move to an online education model to some degree. But the transition wasn't easy. Aside from magnifying "digital divide" issues involving technological access and at-home support, online learning was never meant to be an overnight transition. Strong digital curricula are born of collaboration between teachers, instructional designers, and administrators. The sudden shift bypassed that step and has demonstrated the need for increased professional development in online delivery.

However, as more instructors use online learning resources and get implementation support, we're seeing a greater willingness to integrate edtech into education systems and prepare for future applications.

## Health informatics

While healthcare occupations were not immune to job reductions in 2020, the industry fared better than many. In May 2020, healthcare employment was down 6% (primarily in the dental and administrative sectors), as compared to a 13% overall drop in US employment.<sup>(90)</sup> Despite these setbacks, there's been increased attention to the importance of health informatics positions in the field of healthcare.

From the management of a massive influx of patient records, to the maintenance of telehealth networks, to the collecting and reporting of public health data, informatics specialists have been at the center of this health crisis. And as COVID-19 cases decrease, informatics professionals will have a continued vital role in the digitization of healthcare and the identification of meaningful public health trends.

## Internet of Things

The driving force behind most innovation is the need to solve a problem — the bigger the problem, the greater the innovation. 2020 was not short on problems to be solved. A huge percentage of the workforce was suddenly operating from home, contact tracing became vital for data collection and prevention, a massive rollout of medical supplies (and eventually vaccines) had to be coordinated, businesses struggled to stay open, and so much more.

Vodafone conducted a global survey of 1,639 businesses on the impact of COVID-19. 84% of respondents felt that IoT technology would be key in maintaining continuity of business during the pandemic, and 73% said that the situation would be accelerating their plans for adopting the technology.<sup>(91)</sup> This is great news for IoT engineers and architects who have stronger-than-ever support to help shape what "the new normal" looks like for the world.

## Cyber security

In the field of cyber security, which already boasts a 0% unemployment rate, there's great opportunity for experts to be of significant use in the face of COVID-19. With the growing number of at-home workers and an overall increase in individuals' online presence, the risk of hackers exploiting the situation is higher than ever. Cyber security professionals are essential in mitigating this risk.

According to Nick Espinosa, an industry thought leader, maintaining security for the healthcare industry is a primary concern. "We've seen a massive rise in threats and attacks against healthcare systems, but it's worse if someone dies due to a malicious cyberattack when we have the ability to prevent that. A lot of people are involved [in a coalition to counter the latest cyber threats] because they're emotionally attached to the idea of helping this critical infrastructure stay safe and online."<sup>(92)</sup>

## Data science

As with cyber security, data science jobs are proving to be fairly pandemic-proof. The careers above represent an abundance of data produced in the sectors of social media, health informatics, and Internet of Things alone. Not only do we need experts to be able to analyze all this data to drive crucial innovations, but businesses — many of which struggled to stay operational during shut-down — have been relying on analysts to help them navigate the economic downturn with data-driven decision-making. According to Forbes, as of July 2020, 7.6% of data scientists said their teams had increased hiring, while 42% remained unimpacted by salary cuts, layoffs, or furloughs.<sup>(93)</sup>

## Environmental science

In the short term, environmental scientists and others in the conservation industry are facing job insecurity in the current financial climate. In April 2020, conservation jobs in the non-profit sector dropped by an estimated 50% compared to their normal levels. Academic scientists faced similar loss of opportunities as institutions went virtual and funding was diverted.<sup>(94)</sup>

However, with the US rejoining the Paris Climate Agreement in 2021 and the Biden administration setting ambitious climate goals, environmental scientists and engineers are being called to action. They are not just collecting atmospheric and other data pertaining to the effects of stay-at-home orders on pollution and air quality, but working towards Biden's pledge to cut greenhouse gas emissions in half by 2030.<sup>(95)</sup>

## Diversity & inclusion

In April 2020, US unemployment as a result of COVID-19 hit its peak of 14.8%. This broke down to 14.2% for white workers, 16.7% for Black workers, and 18.9% for Hispanic workers.<sup>(96)</sup> This disparity was echoed in the reduction of job openings for D&I specialists, which dropped twice as fast as those for most other careers.

Between the growing awareness of these figures and the more significant public outcry for expanded civil rights in the wake of George Floyd's murder, the market for D&I expertise rebounded to be even bigger than pre-pandemic times. So while D&I jobs may have suffered at the onset of COVID-19, greater forces have brought to the world's attention the need for effective D&I initiatives in all industries.



# Paths to sustainability

Across all career paths, good citizenship is good business. Employers define sustainability in different ways, but common principles include reducing negative effects on the environment, breaking down barriers to access — to education, products, services, and healthcare — and respecting human rights through diversity, equity, and inclusion.

These principles go beyond careers with more obvious application, such as online learning, environmental science, or diversity & inclusion. The practice of sustainable business includes mindful hiring practices, responsible production and procurement decisions, and small daily choices by every employee.

Here are some key themes in sustainability and ways our emerging careers are addressing them.

## Rebooting a classic

Not only does the **wine & beer** industry have environmental impact with regards to agricultural practices and the packaging and distribution of product, but the industry — in particular, wine — is historically white-dominated and viewed by many as elitist. So how is the industry evolving?

The California Sustainable Winegrowing Alliance was created in 2010 and has certified 2,247 vineyards as sustainable. The beer industry is further behind in establishing a centralized sustainability organization, but the Iowa Waste Reduction Center launched the Iowa Green Brewery Certification. The IGBC is leading the way in defining environmental sustainability benchmarks for the industry.

On the diversity front, less than 1% of US wineries and breweries are Black-owned. However, recent media attention on those few establishments has amplified their presence and given them a platform for representation. And while Latinx people have been entrenched in the wine industry for generations — they make up 95% of Napa Valley field workers — they have little presence in management or front-of-house roles.<sup>(97)</sup> Resources for increasing diversity, including scholarships and mentorships, are helpfully compiled by [Food & Wine](#) and [Good Beer Hunting](#).

## Representation & social responsibility

Though its algorithms often support confirmation bias and can increase divisiveness, at its best, **social media** has the opportunity to help people connect across traditional social barriers.

The professionals who use those platforms as marketing channels are speaking to a community that makes up an incredible 58% of the world (ages 13+) and 82% of the US.<sup>(98)</sup> The value of ensuring that all types of people in that community have a face and voice in the content being shared is not only moral, it's also just good business. 61% of Americans see diversity in marketing as important, and 69% of brands that put this into practice saw their stocks go up in 2019.<sup>(99)</sup>

With **eSports**, there's also plenty of opportunity to increase diverse representation in marketing, with influencer partnerships, and the selection of hosts, streamers, and YouTubers. Says Malik Forte, an eSports producer and host:

"From the community organizers, to the teams, to the broadcasts and productions, there needs to be more representation across the board so that everyone feels accounted for and welcomed... The entire landscape of people should have an opportunity to see things and weigh in on decision-making instead of it always being only white men speaking for everybody."<sup>(100)</sup>



## A digital divide & the participation gap

The sudden switch to **online education** amid the 2020 lockdown exposed a barrier to access known as the “digital divide.” This gap between those who have the tools and resources (i.e., computers and internet access) to benefit from online learning and those who do not is largely a socio-economic division and disproportionally affects minority learners. Most severely affected are Indigenous American students living on rural tribal lands, 70% of whom have no access to broadband.<sup>(101)</sup>

Overcoming this sustainability challenge will require significant work by federal policy makers. The Department of Education’s National Education Technology Plan (NETP) hasn’t been updated since 2017, and a 2021 revision is said to be addressing infrastructural barriers to access. In the meantime, the NETP has a number of practical suggestions to help educators address the divide (as do edtech degree programs).

Also significant is the idea of the participation gap, which goes beyond access to address students’ differing proficiency with technology. Factors include how they access the tools, the parental support they receive, and their own enthusiasm for technology. As we begin to close the digital divide, there’s an opportunity for the edtech industry to work toward solutions for this other aspect of digital equity as well.

## How ecological is the cloud?

Digital technologies are at the center of our economy. This is evident in the projected growth of industries like **health informatics**, **Internet of Things**, **cyber security**, and **data science**, accelerated by changing consumer behaviors during the COVID-19 pandemic.

This trend has many sustainability advantages. Careers that lend themselves to working from home mean less environmental impact from cars and mass transport. Digital-based industries reduce reliance on paper and frequently generate less physical waste. And IoT, in particular, has developed numerous solutions for making homes and business more energy efficient.

But data and the cloud aren’t just abstract concepts. All the patient data in the health informatics industry and steps recorded by activity trackers have to live somewhere. Cloud data is stored on massive servers owned by big tech companies. It’s believed that US data centers use upwards of 2% of all electricity in the country.<sup>(102)</sup>

Since the amount of data is only increasing, sustainability through “green cloud” efforts is a major objective for digital industries. This entails investment in renewable energy resources and leveraging machine learning for efficiencies. Carbon neutrality is a huge effort for the big companies, and as they identify and overcome challenges, their lessons learned will be influential to other industries.





## The sustainability leaders

The careers of **environmental science** and **diversity & inclusion** show what sustainability can look like when put into action. Environmental scientists aim to identify current conditions and challenges we face with our environment and develop new ways to solve for the issues, improving the health of the planet and those who live on it. Incorporating diversity and inclusion in the definition of sustainable business is a newer concept. It's about creating a strong and accepting community within a business that celebrates individuals, encourages diversity of thought, and builds trust among employees.

The ideals these two careers represent can, and should, be transferable to any career. Almost any job will have opportunities for professionals to think about how decisions they make will impact the environment, economy, and society.

### Key sustainability skills<sup>(103)</sup>

Complex problem solving	Responding effectively to challenges while keeping environmental, social, and economic impacts in mind.
Critical thinking	Engaging in problem solving by asking the right questions from a variety of perspectives. Actively considering possible biases at play and challenging them.
Adaptability	Maintaining resilience and creativity through change. Learning to benefit from constant evolution to technologies, ways of working, and the make-up of teams.
Emotional intelligence	Emphasizing empathy over ego. Being able to connect with others and work together towards a common objective.



Learn more about what you can do to prepare students with the skills they need for these or many other careers at

**[go.pearson.com/CareerReadiness](https://go.pearson.com/CareerReadiness)**

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