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Fulfill Your Aspirations With
An Enterprise Computing Career

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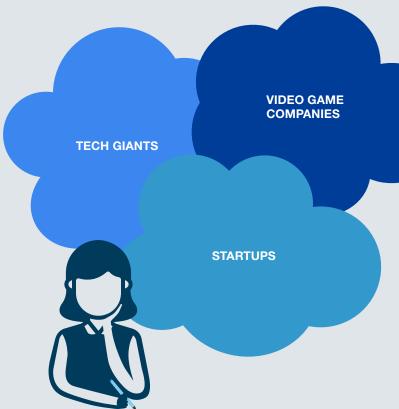
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Digital Technology Offers A Wide Array Of Career Opportunities

Everyone dreams of finding a job doing something they love. For those who love digital technology, degrees in computer science, information technology (IT), and managed information systems are popular choices leading to a successful career working with computers. Many students enter these programs with a preconception of the types of jobs they ultimately want, but the breadth of computing careers is much larger than what's portrayed in popular culture and the news.

For every Silicon Valley unicorn, social networking startup, or video game studio, there are a multitude of other digital technology jobs out there that can provide meaningful, rewarding, and stable careers to students who are passionate about technology. These business computing careers make up the bulk of the 4 million+ computer and information technology jobs tracked by the US Bureau of Labor Statistics.

Enterprise computing careers are not top of mind for students

VIDEO GAME COMPANIES

TECH GIANTS

STARTUPS

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Study Overview

In August 2019, IBM commissioned Forrester to conduct research around how students are thinking about digital technology careers, specifically enterprise computing jobs (i.e., jobs working with enterprise technology systems that support key business functions: e.g., relational database technologies, mainframe, business process execution, and enterprise computing).

We designed our research to look at students' careers goals and objectives and compare them to the actual experiences of working professionals to identify rewarding career paths that were perhaps outside the technology jobs students typically think about. The research also captured the perspective of educators responsible for the courses and curriculum for students entering the digital technology field to better understand what opportunities they are seeing for students.

The study included three primary research approaches:

Online session to explore students' career goals

Survey to understand working professionals' current experiences

Interviews to capture the perspective of career advisors and college professors.

*See research methodology section for more details

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Are You Aware Of Enterprise Computing Careers?

Students interested in digital technology careers are naturally attracted to the new technologies they hear the most about and see high demand for. But they aren't the only digital technologies companies depend on. Some of the most important, mission-critical technologies firms use are technologies that many undergraduates have little to no awareness of, such as mainframes or other enterprise computing technologies.

Think carefully about the broad range of opportunities available and types of technologies the broadest number of potential employers are looking for. Most students looking to become software developers know multiple programming languages, but fewer have hands-on experience in software engineering practices or enterprise computing technologies that large companies rely on. The potential result: Students miss job opportunities because of lack of awareness and lack of specific skills.

Students' top interests with tech careers

Software Design / Programming
- Can be creative / solve problems
- Versatile use and application

Artificial Intelligence
- Promising growth in the future
- Will likely impact all industries

Machine Learning
- Cutting edge technology
- Can provide wide benefits to people when incorporated into products

Virtual Reality
- New and exciting technology
- Popular among consumers

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Enterprise Computing Jobs Can Meet Or Exceed Your Key Career Aspirations

What are university students looking for when it comes to digital technology careers? We found five things that matter most: a good salary, work-life balance, being in a career that makes a difference, working on something that aligns with their interests in technology, and job security. If these are important to you, then an enterprise computing career might just fit the bill.

Through a survey of digital technology professionals, we found that satisfaction across these five measures is significantly higher for those working in enterprise computing technology compared to other computing careers where people are not specifically involved with those technologies.

Students top 5 career aspirations

Good salary

Good work-life balance

A Career That Makes A Difference

Working On Something That Aligns With Primary Interests In Technology

Job security

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1) High, Competitive Salary

We asked students pursuing digital technology careers what their ideal starting salary would be right out of college. The median for ideal starting salaries is $70,000 to $79,000. This expected salary aligns well with the average starting salary of professionals working in enterprise computing careers ($70,100) but is roughly $10K higher than the average starting pay across all computing roles surveyed.

And the salary gap between enterprise computing careers and other technology careers increases over time. In looking at average salary (including bonus) for working professionals across all levels of career tenure, the average income for enterprise computing roles is nearly $40K higher than those in other computing roles. This highlights a substantial earning differential that could be accumulated over a long, successful enterprise computing career.

Average salary by computing roles

● Enterprise computing role   ● Other computing role

Over $180k
23%
5%

$140k to $180k
26%
12%

$100k to $140k
22%
23%

$60k to $99k
21%
36%

Under $90k
8%
24%

Average Starting Salary (+ bonus)

Enterprise computing role
$134,550

↓

$37,950 Gap

↑

$96,600
Other computing roles

Average Starting Salary

Enterprise computing role
$70,100

Overall average (across mixed IT roles)
$62,950

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2) Comfortable Work-Life Balance

When asked which single criterion they find most important in a job, 36% of students said a good work-life balance, higher than any other factor, including salary. A work-life balance has many facets, but in particular, students care about having consistent, flexible hours and the ability to work remotely (either permanently or on an as-needed basis).

Our survey found that professionals working in enterprise computing careers are more likely to be highly satisfied with their current work-life balance compared to those in other technology roles (13% difference). They are also slightly more satisfied overall with their job location (e.g., easy commute, affordable housing, etc.).

"How satisfied are you with the following aspects of your job?" (% rating 8,9,10 out of 10)

● Enterprise computing role   ● Other computing role

A good work/life balance
- 70%
- 57%

Job location (e.g., easy commute, access to public transportation, affordable housing nearby)
- 63%
- 61%

Flexible hours and work policies (i.e., providing more autonomy to let you work in the style you prefer)
- 66%
- 63%

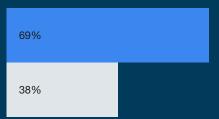# 3) A Career That Makes A Difference

Many students defined a rewarding career as one where they can make a difference or be involved with something that matters. This fulfillment is an important part of a rewarding career: 66% of students we interviewed considered the ability to make a social impact in their career of high importance. Examples include increasing access to technology for all communities, products that improve well-being, and increased diversity inside the computer and IT family of jobs.

We asked working professionals in various computing roles how satisfied they were with their ability to make a social impact (i.e., contributing to open source, social, or community groups with technical skills), and nearly 70% of those in enterprise computing roles gave high satisfaction marks for this factor, compared to just 38% of those in other technology roles.
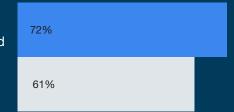
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"How satisfied are you with the following aspects of your job?" (% rating 8,9,10 out of 10)

● Enterprise computing role   ● Other computing role

Social impact, for example, the ability to contribute to open source, social, or community groups, with your technical skills

69%

38%

The reputation/brand of the prospective employer

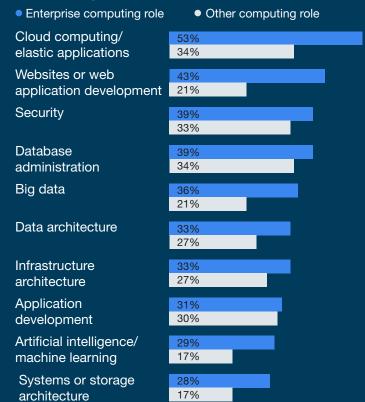72%

61%

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4) Working On Something That Aligns With Primary Interests In Technology

Students who are passionate about technology want to keep that connection throughout their career. This includes being able to work with new, leading technologies. While some people might not consider enterprise computing systems (such as mainframes) to be leading technologies, these systems are tightly connected with several other business systems to support the business, which opens up plenty of opportunities to work with different technologies and skills.

Seventy percent of professionals working in enterprise computing roles reported high satisfaction with their opportunities to work with leading technologies or tools, compared to 57% of professionals in other technology roles.

"In the past 12 months, which of the following types of development or systems management work have you done?"

● Enterprise computing role   ● Other computing role

	Enterprise computing role	Other computing role
Cloud computing/ elastic applications	53%	34%
Websites or web application development	43%	21%
Security	39%	33%
Database administration	39%	34%
Big data	36%	21%
Data architecture	33%	27%
Infrastructure architecture	33%	27%
Application development	31%	30%
Artificial intelligence/ machine learning	29%	17%
Systems or storage architecture	28%	17%

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5) Good Job Security And Role Longevity

Students want a career they can rely on for a steady income and that will still be important years down the road. Nearly 90% of professionals working in enterprise computing careers agree the job market for professionals with their skill set is growing, and 75% also believe there is a shortage (i.e., high demand) for their skill sets as well. This is very promising in terms of job security.

For example, 65% of professionals we surveyed in enterprise computing roles said they are still working in the first job they'd had since completing their formal education, compared to just 22% of those working in other technology roles. This demonstrates strong job stability as employers are likely working hard to nurture and retain their enterprise computing talent.

FORRESTER OPPORTUNITY SNAPSHOT: A CUSTOM STUDY COMMISSIONED BY IBM, NOVEMBER 2019

"Is your current job the first job you've had since completing your formal education/training?"

● Enterprise computing role   ● Other computing role

Yes
28%
17%

No
28%
17%

Percentage of enterprise computing respondents who agree or strongly agree with these statements

The job market for those with my skill set is growing
87%

My company is constantly looking to hire people with skill sets like mine
79%

There is a shortage (i.e., high demand) for professionals with the skill set I have.
76%

You Don't Need To Know Everything To Start An Enterprise Computing Job

There are too many programming languages, tools, and technologies for academic institutions to come close to teaching it all as part of a four-year program. However, three in five students feel their education has provided the right skills to succeed at their ideal job, which for many means a solid foundation in multiple programming languages and the ability to quickly learn new skills and adapt to new situations.

Employers also expect to train new hires. Sixty-seven percent of professionals in enterprise computing roles said they were required to complete training courses through their employer, and 50% said on-the-job training was a core part of their post-university education. Professionals consider the combination of a bachelor's or master's degree and employer-provided training as most effective at teaching them needed job skills but must also be prepared to learn new skills on the job.

"How effective was your formal or informal education coursework at teaching you the skills necessary to do your job?"

● Enterprise computing role

Code school/boot camp*	75%
Masters degree	70%
Employer on-the-job training	65%
Bachelors degree	63%
Employer required formal training (e.g., training program/courses)	62%

*Note, sample size under N=30
Base: Varied counts of IT professionals involved in software development, IT support, enterprise architecture, high-end computing systems administration/development, data science, etc.

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Be Open To Learning More About Enterprise Computing Careers

As you start seriously considering where you want your technology career path to go, think hard about what aspects of a job really matter to you and seek out jobs that will give you that. Look for opportunities beyond start-ups and large technology firms: Technology needs are just as critical in large businesses (where there is a lot of demand and likely less competition for jobs).

If you are interested in learning more about enterprise computing roles, there are many resources within your reach to give you better understanding of potential opportunities. Enterprise computing roles have been around for a long time, but their importance today is as high as it has ever been. Companies are eagerly looking for that next generation of talent, like yourself, to fill these business-critical roles.

Actions You Can Take To Learn More About Enterprise Computing

1) Talk with your professors or career counselors about your interest in enterprise tech. They'll likely be able to point you in the right direction for exploring new opportunities and maybe connect you with alumni or others in similar roles to share experiences.

2) Look for internship opportunities (outside of traditional tech firms) where you can get exposure to enterprise computing. Most schools offer, or even require, students to participate in an internship to get practical experience and to potentially learn about alternative career paths. For some students, these experiences shed light on skills gaps needed for desired careers, which helps them better tailor their remaining coursework to acquiring the skills they need to fill those skill gaps.

3) Explore experiential learning opportunities. Similar to internships, the best way to learn is to try. Talk to your professors about any industry projects or partnerships that exist that can give you hands-on experience to apply and hone your learned skills in a practical way.

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Methodology

An online focus group of 117 college students interested in pursuing careers in digital technology.

Qualitative interviews with four professionals from academic institutions working as professors or career advisors for students in technology majors (primarily computer science, managed information systems, or information technology).

Online survey of 414 IT professional working in a variety of IT roles in companies with 500 employees or more in the US, the UK, Germany, the Netherlands, Denmark, and Brazil.

ENDNOTES

[1] Source: "Computer and Information Technology Occupations," Bureau of Labor Statistics (https://www.bls.gov/ooh/computer-and-information-technology/home.htm).

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