

## Emerging careers

# 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>1</sup>

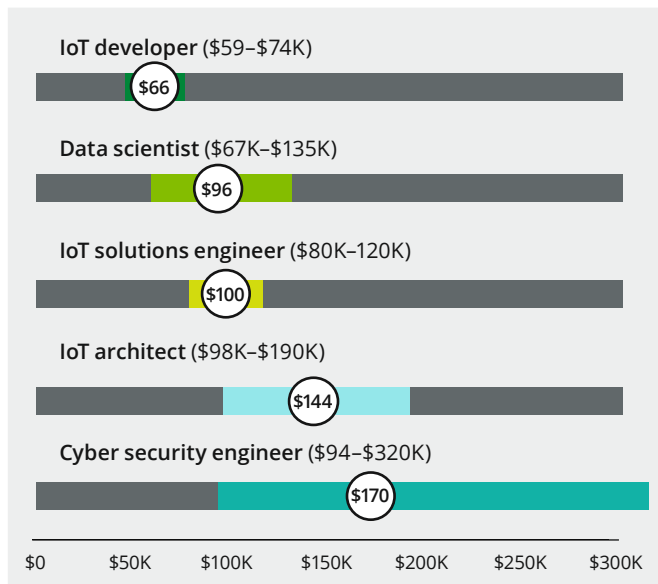
Although investment and development may have slowed during quarantine, COVID-19 is set to spark further growth. More time at home means more people connecting their homes for health, wellness, and efficiency, and the healthcare industry is leveraging smart tech for tasks like early detection and contact 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>(2,3)</sup>

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

Key roles and salary ranges



## Skills of the field<sup>(3)</sup>

### Technical skills

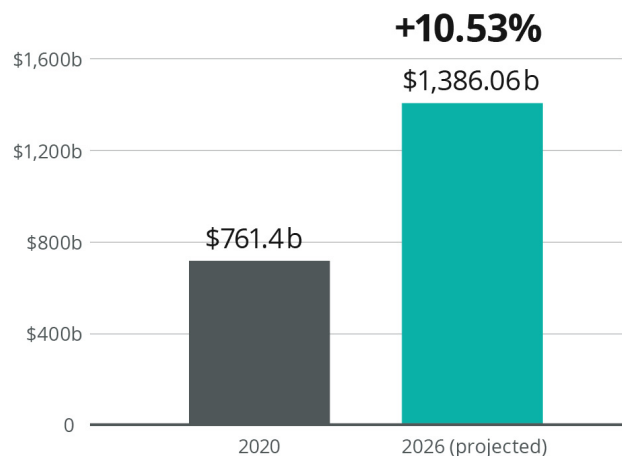
- Embedded software development
- Wireless networking
- Data and AI
- Programming
- Cyber security

### Soft skills

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

## Market growth

IoT global market value today vs. projected growth<sup>6</sup>



## Study options available

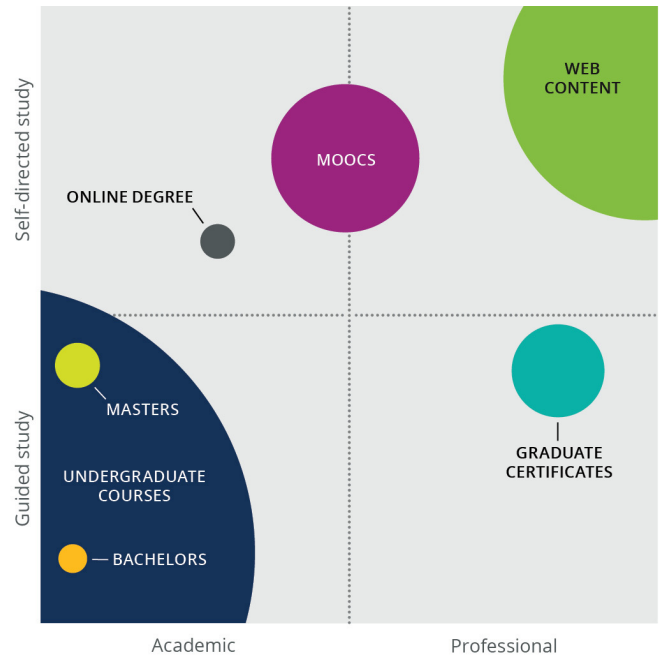
While there are only a couple US colleges offering a bachelor's degree specific to IoT, the rise in options internationally indicates that number will likely increase soon. In the meantime, for many entry-level roles, a bachelor's in information technology, computer science/engineering, or software development 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>7</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.

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## 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>8</sup>

### Sources

<sup>1</sup> "How Many IoT Devices Are There in 2020?", Nick Galov

<sup>2</sup> "IoT Careers", EDUCBA

<sup>3</sup> "A Guide to IoT Careers", Samantha Costanzo Carleton

<sup>4</sup> "Internet of Things: Here's a preparation checklist for a career in this emerging sector", Taniya Choudhury

<sup>5</sup> "Salary for Skill: Internet of Things (IoT)", Payscale.com

<sup>6</sup> "Re-Hashed: 27 Surprising IoT Statistics You Don't Already Know", Casey Crane

<sup>7</sup> "Internet of Things: Here's a preparation checklist for a career in this emerging sector", Taniya Choudhury

<sup>8</sup> "10 Tips For Women Who Want To Pursue A Career In IoT", Home Security List

