

Cutting Edge  
**STEM** Careers



Cutting Edge Careers in  
**INFO TECH**

Leanne Currie-McGhee



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**For more information, contact:**

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# User Interface Designer

## What Does a User Interface Designer Do?

When people use an app, video game, or website, what they see and how they interact with the screen constitutes the user interface (UI). The colors, words, pictures, icons, and backgrounds must be appealing, and the navigational tools—such as scroll bars and drop-down lists—must be easy to manipulate. These elements are planned by a UI designer, who strives to make the user’s experience pleasant and

rewarding so that the user will return to the site or reuse the app.

UI designers focus specifically on designing a look and layout of a product to give the user a positive experience. UI designers use patterns, spacing, and color to guide users through their experiences with the website or app. Hannah Alvarez, a designer with InVision, a company that provides digital design services to clients, explains, “The purpose of any interface is to help the user accomplish their goals. As a UI designer, your job isn’t just to create something beautiful; it’s to understand the user’s mindset, predict what they will expect, and then make the design as user-friendly as possible.”<sup>42</sup> Much of what a successful UI designer creates will go unnoticed by the user, however. That is, most users will not focus on the interface but instead enjoy the experience and function of the

### A Few Facts

#### Number of Jobs

About 160,500 in 2019

#### Median Pay

\$80,450 in 2019

#### Educational Requirements

Bachelor’s degree in digital or graphic design or similar field

#### Personal Qualities

Intuitive, detail oriented, creative

#### Work Settings

Office setting

#### Future Job Outlook

Projected 13 percent growth through 2028

app or site. Thus, the ease of use of an interface is the hallmark of a good design.

To reach a good design, UI designers first meet with clients interested in creating an app, program, or website. The meeting will help determine the design requirements needed to make the program or site useful. Then the designers will start developing ideas for visuals, often beginning with sketches and “mood boards” (boards with different color schemes and design patterns) to get a feel for the look of the product. From there, they use software tools such as Sketch, Figma, and Adobe XD to design wireframes, which are visual mock-ups that outline the basic visual structure of the website, app, or program.

The next step includes making prototypes, using tools like InVision software, through which the visual aspect and UI of the product can be tested. After further meetings in which all involved discuss problems or ways to develop a better design, the design team will fix or update the interface. From there, the visual design is implemented into the final product by software engineers and programmers who do the actual coding.

## **A Typical Workday**

Kyle Markell is a senior UI designer at Konrad, a company that provides digital design products. He starts his day by meeting with his team to ensure everyone is on the same design page and to brainstorm new ideas. Throughout the day, in between actual designing, he continues to reach out to those impacted by the design, including other designers and coding programmers. “My day . . . has multiple touchpoints with the teams, not limited to my own, to make sure things are moving at the required pace, also to test my solutions on others, gain outside perspective and have some iterative design sessions with some fellow designers,”<sup>43</sup> Markell explains.

Like Markell, Jennie M., a senior UI designer at ASOS, an online retailer, spends part of her day meeting with others, many of whom are online shoppers. “Our team is responsible for designing how the website and apps work,” she says. “We talk to customers

## How to Define a Successful UI

“Generally speaking, if the final [UI] feels considered, is intuitive to use, engages with the respective audience, is striking and visually embodies the brand, then I deem that a job well done.”

—Matt Bartlett, senior UI designer at web-design agency Ridgeway

Quoted in Ben Davis, “A Day in the Life of a User Interface Designer,” Econsultancy, February 27, 2017. <https://econsultancy.com>.

and make sure we can make the experience of shopping on ASOS as efficient, easy to use and functional as possible, so our customers can make informed choices.”<sup>44</sup> She uses this information to maintain an appealing site interface.

When not in meetings, UI designers devote their time to actually designing the interfaces. Matt Bartlett is a senior UI designer at the web-design agency Ridgeway. He says his main priority is to translate the user’s experience into combinations of color, arrangements of screens and levels, helpful images and icons, and lettering styles. “With all the necessary information at hand, I’ll start crafting the interface of whichever solution I’m working on,” Bartlett says. “In most cases, I’ll be designing templates and components for desktop, tablet and mobile devices.”<sup>45</sup>

Once the templates are drafted, Bartlett runs them by the programmers to ensure the visual plan can be translated into code. If the plan is feasible, the programmers integrate the design into the final product, and the UI designer can see the fully functional program, app, or website.

## Education and Training

Most UI designers have a bachelor’s degree in graphic or digital design because many companies prefer to see such a degree when hiring. While in high school, taking courses such as graphic arts, basic art, drawing, and anything art related will help prepare students to reach these educational goals.

Although it is easier to find a job in the field with a degree, people can still learn the basics of design on their own and find a path to a UI career. “You need to invest your time in acquiring knowledge and then making use of the knowledge you will gain, so start reading articles, books, listen to podcasts and watch design related videos,” says Dawid Tomczyk, a self-taught senior UI designer. “There are tons of articles & video tutorials available online for you to learn about new design trends, use cases and tutorials.”<sup>46</sup>

There are also UI design courses available from different companies and schools that lead to UI certifications. These add to one’s knowledge and skill set, which is helpful when applying for a job in the field. An example of a certification is UI Design Specialization by California Institute of the Arts, which is earned by taking four online courses over sixteen weeks.

## **Skills and Personality**

UI designers must possess creativity and imagination in order to craft an engaging interface. Additionally, designers must be intuitive so that they can understand how users feel when seeing and using elements of the product. Also, designers must be dedicated to the effort required to research and understand users. Steve Portigal, a design consultant on digital projects, explains, “It’s incredibly important to be able to talk to people who might use your product—not just to get their critique of your solution, but before you even consider a solution. That’s when you can have the most open mind and learn about their current behavior and the motivations that drive that behavior.”<sup>47</sup>

Being detail oriented is also important, because designing is about the details. From the colors to the layout, every design choice impacts the user. “When it comes to UI . . . design attention to details is crucial—sometimes even really small and subtle change might make [a] huge difference, so you need to start paying attention to every single detail of your designs,”<sup>48</sup> explains Tomczyk.

While UI designers do not code extensively, technical skills—such as the ability to use software tools like InVision and Sketch to build visual wireframes and prototypes—are essential. Some coding knowledge also makes it easier for designers to communicate with programmers.

## **Working Conditions**

UI designers may work as freelance designers from their home office or work at a company, often in a shared work space. Those who work on-site may work in offices that are designed to stimulate creativity and design. Rather than a typical cubicle or office setting, some companies, like IBM, find it beneficial to have their design teams work in open studio spaces. “On an average day in the studio, you’ll likely find designers busy working at common tables surrounded by whiteboards and walls full of design artifacts. But, big open spaces might not be everyone’s cup of tea all the time,” explains Arin Bhowmick, global vice president of design at IBM. “Sometimes designers need a quiet place to work heads down or talk privately to a remote colleague or manager.”<sup>49</sup>

UI designers will have access to design tools that allow them to build an interface. Since most of their work is on computers, they will typically have computers with large monitors to see their work clearly and have access to all the software tools for forming the prototypes.

## **Employers and Pay**

UI designers are often directly employed by companies to develop websites, apps, and programs for clients. Apple, Google, IBM, and numerous other companies use UI designers to make their products look appealing and to convince consumers that these products are easy to use. A company’s reputation often rests on how user-friendly their programs, apps, and sites are.

Because businesses recognize the importance of popular and useful interfaces, they are willing to pay higher-than-



*User interface designers focus on what users see and how they interact with apps, video games, and websites. They use sketches and mood boards that have different color schemes and design patterns to get a feel for the look of on-screen visuals.*

average salaries to UI designers. In 2019 Glassdoor reported \$80,450 as the average salary of a UI designer. In the same year, ZipRecruiter found that annual salaries ranged from \$23,500 to \$161,000. However, the site noted that the majority of entry-level UI designer salaries fell in the range of \$59,000 to \$112,000.

## **What Is the Future Outlook for UI Designers?**

Companies have found that increasing the quality of their technological products results in more profit, and good quality includes a sharp interface. Over the past decade, companies like Apple and Facebook have employed a design-centric mind-set to set themselves apart from the competition. This is why UI designers have a bright future. In fact, UI designer came in third as the most in-demand digital, marketing, and design role for

# Source Notes

## Increasing Opportunities

1. Bob Grove, "It's Time We Harnessed Big Data for Good," World Economic Forum, October 17, 2019. [www.weforum.org](http://www.weforum.org).

## Cloud Solutions Architect

2. Quoted in Amazon Web Services, "What's It Like to Be a Solutions Architect at AWS ANZ?," YouTube, February 19, 2018. [www.youtube.com/watch?v=aOiNTVIANngs](http://www.youtube.com/watch?v=aOiNTVIANngs).
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4. New Horizons Computer Learning Centers, "How to Become a Cloud Architect," July 9, 2019. [www.newhorizons.com](http://www.newhorizons.com).
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## Computer Vision Engineer

6. Quoted in Manu Jeevan, "Interview with Computer Vision Expert Adrian Rosebrock," Big Data Made Simple, October 12, 2015. <https://bigdata-madesimple.com>.
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8. Quoted in Jeevan, "Interview with Computer Vision Expert Adrian Rosebrock."
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11. Zeeshan Zia, "What a Typical Day Is Like Working on Self-Driving Cars," *Forbes*, December 13, 2012. [www.forbes.com](http://www.forbes.com).

# Interview with a Cloud Solutions Architect

Travis Webb is a Google cloud solutions architect. He lives in Norfolk, Virginia, and has worked in the information technology industry for over eight years. He answered questions about his career via email.

## **Q: Why did you become a cloud architect?**

**A:** [Google] Cloud enables individuals and businesses to do things that were not previously possible by bringing a ton of advanced technology together into a single platform and making it available to everyone. It's natural for me to want to help people use a product that I believe in, and it's no surprise that the cloud market is growing amazingly fast. The benefits are immense and obvious, and the product basically sells itself. For me, it represents the perfect combination of software, systems engineering, and business consulting.

## **Q: Can you describe your typical workday?**

**A:** It's hard to describe a typical workday because the work is very different day-by-day. But if I zoom out a bit, I can describe a typical work-month. In a given month, I might travel to two or three different cities to meet with various customers, learn about their businesses and their current challenges, and help them understand how they can leverage Cloud to achieve their business objectives. I may be visiting other Google offices to meet with my colleagues and collaborate on a draft for a new solution we are working toward publishing and talk about new ideas. In the remaining time, I'm working either at home or in my office, meeting with my colleagues remotely, or focusing on writing a conference talk or solution draft.

be doing different things and solving different problems than I am today. It's the nature of technology that you don't tend to re-solve the same problems over and over. Once a problem is solved, you turn it into a solution that can be used by others, and move to the next problem, and continue to advance the state of the art.

**Q: What personal qualities do you find most valuable for this type of work?**

**A:** In this sense, adaptability is very important. A deep interest in solving these kinds of problems is one of the main things I look for when interviewing candidates, for example. If you care about what you're doing, any missing pieces will fall into place over time. The nature of the job is discovering new and better ways to do things, so you usually don't know how to do something before you do it. Your job is not to know things, your job is to figure stuff out. If you think what you're doing is important, you'll do what you need to do in order to be good at it.

**Q: What advice do you have for students who might be interested in this career?**

**A:** First, learn the history of your field and understand why things are the way they are. You will not be spoonfed this knowledge in a typical academic program and you will need to seek it out for yourself: buy old industry magazines, read biographies of computing pioneers such as Grace Hopper, Alan Turing, and Bill Gates, read books on business successes as well as failures, and build a more holistic picture of the industry you're entering. Understanding the historical context will allow you to "speak the language" of business and connect with the senior people who are interviewing you in a way that most of your peers will not be able to.

# Other Jobs in Information Technology

Application developer	Help desk administrator
Applications engineer	Help desk specialist
Augmented reality developer	Information technology analyst
Chief information officer	Java developer
Chief technology officer	.NET developer
Cloud consultant	Network administrator
Cloud system engineer	Software architect
Computer architect	Software developer
Computer hardware engineer	Software engineer
Computer network specialist	Software quality assurance analyst
Cybersecurity engineer	Systems designer
Data analyst	User experience designer
Database controller	Virtual reality designer
Data quality manager	Virtual reality engineer
Desktop support specialist	Web administrator
DevOps engineer	Web developer
Front-end developer	Webmaster
Full-stack developer	

Editor's note: The online *Occupational Outlook Handbook* of the US Department of Labor's Bureau of Labor Statistics is an excellent source of information on jobs in hundreds of career fields, including many of those listed here. The *Occupational Outlook Handbook* may be accessed online at [www.bls.gov/ooh](http://www.bls.gov/ooh).

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