Resources for Exploring Careers in Technology

Technology touches every industry, and jobs in tech are equally as diverse. Many careers don’t require hard coding skills. For positions that focus on coding skills, many companies prefer to see that you can learn new technical skills and languages quickly over specific coding skill sets, owing to the dynamic nature of the field. This video offers additional career advice for web development, specifically, https://youtu.be/JilfXmI2ljQ.

When searching, be sure to seek out opportunities beyond the large companies that everyone has heard of (Google, Facebook, etc.). Consider companies that offer tech solutions to your particular field (Autodesk for engineers, Papers for scientists, open source/open access software). If you are interested in gaining experience in multiple sides of tech businesses, consider applying for leadership and rotational programs, https://www.careereducation.columbia.edu/resources/leadership-development-rotational-programs.

Explore the Variety of Career Paths with These Example Fields & Roles

Look up these titles or fields on http://www.indeed.com or LinkedIn to learn more about what projects they work on and what skills are needed. This information is also useful when writing your application documents and preparing for interviews.

**Development/Programming**

**Role functions**

**Design**
- Generate web pages and apps from mockups
- Create and optimize graphics and logos for web

**Front-End Web Development**
- Write and manage user-facing code and architecture
- Utilize HTML, CSS, and JavaScript
- Familiarity with frameworks and libraries

**Back-End Development**
- Build and maintain technologies behind web pages and apps
- Knowledge of server, application, and database
- Create clean, well-documented code

**Full Stack**
- Combination of front-end and back-end skills (all levels of a product)

**Software/Application**
- Plan, design, and implement software systems or applications to desired specifications
- Utilize a variety of programming and analytic tools that suit the needs of the organization and the users

**Sample job titles**
- Front-End Designer
- Front-End Engineer
- Front End Web Developer
- Web Application Developer
- Full Stack Developer
- Application Developer
- Mobile Developer
- Software Engineer

**Research & Development (R&D)**

**Role functions**
- Implement innovative solutions to technology problems
- Design and develop products

**Sample job titles**
- Computer Vision Researcher
- Research Scientist
- Systems Engineer
- Network Engineer
Quality Assurance (QA)/Test Engineer
Role functions
• Tests technology for functionality before release to customers
Sample job titles
• Quality Analyst
• QA Analyst

Sales Engineer
Role functions
• Match customer’s technical requirements with current technology solutions
• Serve as technical resource for sales division
• Create proposals and bids for customers
Sample job titles
• Field Application Engineer
• Product Applications Engineer

Solutions Architect
Role functions
• Design complicated project for client
Sample job titles
• Product Model Architect

User Experience (UX)
Role functions
• Analyze user and business needs
• Devise solutions through engineering, visual design, and psychology
Sample job titles
• UX Architect
• Interaction Designer
• Accessibility Specialist
• User Researcher

Trainer
Role functions
• Create curricula and teaching materials for training
• Design videos, online modules, or in-person workshops
Sample job titles
• Workshop Facilitator
• Technical Trainer

Data & Databases
Role functions
• Design and build systems for collecting, processing, and storing data
• Examine large data sets to better inform decision-making
Sample job titles
• Data Architect
• Data Scientist
• Database Administrator

IT Analyst
Role functions
• Analyze source code and systems
• Create reports on technical subjects for non-technical audiences
Sample job titles
• Technology Analyst

Business Analyst
Role functions
• Research how companies can best use technology
• Implement and evaluate solutions
Sample job titles
• Business Intelligence Analyst

Project Manager
Role functions
• Coordinate and run technology projects
Sample job titles
• Project Lead
• Project Engineer

Product Manager
Role functions
• Manages lifecycle of a product from creation through development, marketing, launch, and maintenance
• Collaborate across multiple divisions of an organization
Sample job titles
• Technical Product Owner
Marketing & Communications
Role functions
- Utilize search engine optimization (SEO)
- Understand client's marketing objectives
- Develop content
- Create strategic, internal communications plans to engage employees

Sample job titles
- SEO Consultant

Technical Support
Role functions
- Empathize with client
- Recommend product solutions
- Troubleshoot

Sample job titles
- Tech Support Specialist
- Customer Support Scientist

Cybersecurity/Cyber Forensics
Role functions
- Identify vulnerabilities of and attacks on cryptographic systems
- Develop countermeasures
- Conduct security evaluations

Sample job titles
- Software Vulnerability Researcher
- Cyber Intelligence Analyst
- Digital Forensics Analyst
Compare Different Tech Organizations

* = in the Raleigh-Durham area; # = history of sponsoring visas from myvisajobs.com

Search LinkedIn or Google Finance for these employers, and look for the section on related companies to help you identify others.

Hardware & Software
- ARM
- QualComm*
- Oracle*

Data Management/Cloud
- NetApp*
- OSIsoft
- Amazon

Government
- EPA*
- State of NC*
- Sandia National Labs

Biotech/Pharma
- DE Shaw & Co#
- Disys*
- Regeneron*

Finance
- WebFinance#
- Voleon Capital Management#
- EquityZen
- Q2ebanking

Networking
- Juniper Networks#
- MITRE
- Harris Corporation#

Science, Math & Engineering
- MathWorks#
- Helix
- General Dynamics

Law
- DisputeSoft
- Appfolio#
- Abacus Data Systems

Consulting
- Rang Technologies#
- Eliassen Group#
- NetCloudTek
- Deloitte#

Telecommunications
- Bandwidth.com#
- Tarana Wireless#
- Keysight Technologies#

Marketing
- BrightEdge#
- eBay#
- Adapt Partners*

Tourism/Hospitality
- Tourico Holidays#
- Orbitz#
- Southwest Airlines#

Health/Insurance
- ArchieMD#
- Relias*
- Children’s National Medical Center#

Information Security
- Ixia#
- BAE Systems#
- MOJA

Business & IT Services
- NTT Data*
- Novetta
- CloudBees*

Media
- Time, Inc.#
- SportsMEDI*
- Facebook#
Read Additional Tech and Career Resources

Read the experience of a PhD who completed a postdoc at IBM
http://tinyurl.com/y8brhx08
Consider this advice for how to network to obtain a job in tech
http://tinyurl.com/y8bszm53
Learn about the skills required and employment trends for these positions at
https://www.onetonline.org
Technology and Software Development: panel discussion and professionals’ career stories on Versatile PhD
https://gradschool.duke.edu/professional-development/access-versatile-phd
Follow these Twitter accounts
@TechCareers, @FirstTechCareers, @WITWomen, @uxdesignjobs, @bdconf, @DesignerDepot

Meet Tech Professionals to Talk About Opportunities and Their Careers

Attend conferences such as Mobile Growth Summit, DeveloperWeek, and Code Media
Association of IT Professionals, https://www.aitep.org
User Experience Professionals Association, https://uxpa.org
Meet local professionals for social gatherings and networking through Meetup, https://www.meetup.com
Contact Duke alumni and other professionals in tech for informational interviews
• Duke Alumni Association
• Alumni on LinkedIn
• LinkedIn Groups: Software & Technology; Information Technology; User Experience

Build These Specific Skill Sets and Highlight Them When Applying

We summarized skills mentioned in job postings and LinkedIn profiles of tech professionals. Particular jobs may not require all of these skill sets, so find out from online resources and professionals you meet which of these skill sets are most relevant.

Teamwork
• Partner with cross-functional teams from different parts of the business

Communication
• Translate needs of partners and users to specific goals
• Explain technical challenges to non-technical managers and clients

Specialization
• Subject matter expertise in field or techniques
• Use of specific coding languages, algorithms, databases, etc.

Clients
• Manage client relationships
• Build rapport

Work ethic
• Discipline
• Tenacity
• Determination
• Get-it-done mentality
• Adaptability
• Learn quickly
• Work in a fast-paced environment

Analysis
• Transform large amounts of data into meaningful conclusions
• Creative problem solving
Gain Experience

You can gain experience in many ways that involve different amounts of time investment.

Take courses on Lynda.com through Duke
  https://oit.duke.edu/what-we-do/applications/lyndacom

Subscribe to the Alertbox Newsletter or UIE newsletter to stay up-to-date on UX research and website design
  • https://www.nngroup.com/articles/subscribe
  • https://www.uie.com

Read news on UX with UXmatters
  http://www.uxmatters.com

UX resources
  http://blog.usabilla.com/12-of-the-best-online-ux-resources

Explore articles on this tech career blog
  https://skillcrush.com/blog

Read tech blogs on industries or careers of interest, such as project management
  https://project-management.com/category/articles

Read tech blogs on industries or careers of interest, such as product management
  http://www.mindtheproduct.com

Learn coding skills on LaunchCode
  https://www.launchcode.org

Learn coding skills on Treehouse
  https://teamtreehouse.com

Work through problem sets and coding challenges
  • https://projecteuler.net
  • https://coderbyte.com/challenges
  • https://www.hackerrank.com
  • https://leetcode.com/problemset/algorithms

Practice coding and technical interviewing
  https://studentaffairs.duke.edu/blog-entry/coding-interviews-what-you-need-know

Use GitHub to create a portfolio of projects and include the link on your resume
  https://github.com

Tech Job and Internship Search Tools

Dice, tech-focused job search website
  http://www.dice.com

CareerConnections, jobs, internships, and events hosted by the Duke Career Center
  https://studentaffairs.duke.edu/career/online-tools-resources

INET & UCAN Internship Databases
  https://studentaffairs.duke.edu/career/online-tools-resources