

EMERGING

A Special Report for Recent and Mid-Career College Graduates

CAREERS

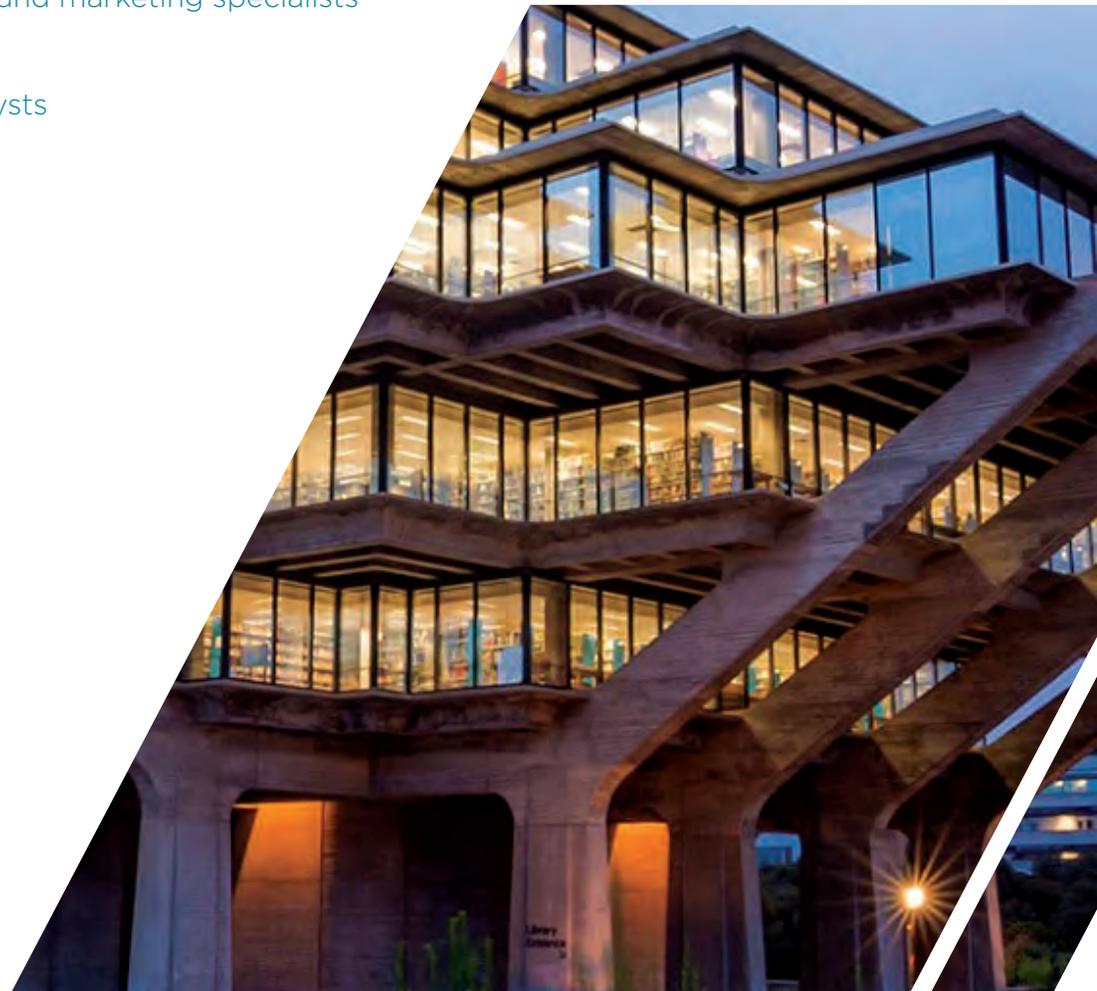
FOR COLLEGE GRADUATES | UC SAN DIEGO EXTENSION

2016



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INTRODUCTION

This year's *Emerging Careers Report* looks at employment opportunities from a slightly different angle than we have recently done in what was titled the *Hot Jobs Report*. Working forward, we will focus on the emerging and increasing number of high-growth professions for which multiple skills represent the keys to success. It is clear from surveys of employers that they are interested first and foremost in generally well-educated employees. What this means is that people with advanced education, often in the liberal arts, are expected to be effective communicators in writing and orally; problem solvers because they will need to know how to respond to often unexpected opportunities or crises; and highly adaptive because they will need to be sensitive to changing technologies and marketplace cues that can affect business strategy or service delivery. Such things as understanding history, demographics, trends in technology, pop culture, as well as traditional values contribute to how effective people can be in many of the jobs described in this report. For example, there are growing opportunities for people in sales, for management analysts, for market researchers, and for financial analysts. In all these cases, employees need specific applied skills and competencies. However, specific technical skills are enhanced if they are supported by a broader intelligence about the markets, human values, economics, and social trends that shape the decisions people with specific skills must make.

This year's *Emerging Careers Report* is encouraging for liberal arts majors, especially for those who add a set of very specific competencies to their general education through a certificate program or specialized post baccalaureate training. Medical and health service managers, sales representatives, research analysts, and financial analysts all require familiarity with specific analytical tools and ways of communicating data. However, the analytical tools and data reporting must be anchored in a broad understanding of society, culture, and human dynamics. At least five of the emerging jobs we describe in this report represent promising opportunities for people who have a strong liberal arts background—"plus," with the "plus" representing credentialing, certification, or even a master's degree in a somewhat more technical and analytical competency.

Again, this year, the growth trend in more technically focused fields continues at a rapid pace. Accountants and auditors, computer systems analysts, information security analysts, civil engineers, and financial analysts represent strong opportunities for employment and high levels of compensation with good career and salary growth over time.

In sum, what is clear from the data is that employment opportunities are strong for individuals who never stop learning. Clearly, a broad, general education can provide an essential foundation for careers such as management, leadership, sales, and marketing. However, individuals will be much more competitive in these fields if they add a component of technical and practical education and training to their general education. The bottom line is it is no longer sufficient to be good at one thing. A person, throughout his or her life, needs to be acquiring skills that build on a solid liberal arts foundation. It is also the case that all fields are increasingly more based on data—more analytical in terms of the core competencies required of incumbents. The job market is very bright for young people and mid-career adults who are constantly upgrading and expanding their "competencies tool kit." A college degree, while increasingly necessary for a good job, is no longer sufficient by itself for interesting, well-compensated lifelong employment.

Sincerely,



Mary L. Walshok, Ph.D.

Associate Vice Chancellor of Public Programs and Dean of Extension

METHODOLOGY

OVERVIEW

1. Emsi national data
 - a. Filtered by:
 - i. Typical entry-level education = bachelor's degree (165 occupations)
 - ii. Work experience required = less than five years or none (149 occupations)
 - iii. 2015–2019 growth = 4 percent or higher (84 occupations)
2. Burning Glass national data (Jan. 1, 2015 to Dec. 9, 2015)
3. First top ten occupations that cross-reference between Emsi and Burning Glass data.

METHODOLOGY NARRATIVE

To determine the top 10 emerging careers for college graduates, researchers analyzed employment projection data and online job postings using Emsi (a labor-market data company) and Burning Glass datasets.

Researchers used national data from Emsi to identify careers that typically require entry-level education of a bachelor's degree and less than five years of work experience or no work experience. From that list, researchers identified occupations that were projected to grow more than the national average employment rate of 4 percent from 2015–2019.

This list was cross-referenced with Burning Glass data, which tracked the top online nationwide job postings in 2015. The top 10 occupations that had the highest projected growth rates and the most job postings were selected to be included as one of the Emerging Careers of 2016.



RESULTS*



EMERGING CAREERS: NATIONAL

RANK	OCCUPATION TITLE
1	Software developers, applications
2	Accountants and auditors
3	Computer systems analysts
4	Medical and health services managers
5	Sales representatives, wholesale and manufacturing, technical and scientific products
6	Management analysts
7	Market research analysts and marketing specialists
8	Financial analysts
9	Information security analysts
10	Civil engineers

EMERGING CAREERS: SAN DIEGO

RANK	OCCUPATION TITLE
1	Information security analysts
2	Market research analysts and marketing specialists
3	Medical and health services managers
4	Computer systems analysts
5	Management analysts
6	Software developers, applications
7	Civil engineers
8	Financial analysts
9	Sales representatives, wholesale and manufacturing, technical and scientific products
10	Accountants and auditors

*Occupation selected based on Emsi projected growth data and Burning Glass online job openings.



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**EMERGING
CAREERS**

NATIONALLY



Software Developers

APPLICATIONS

It's amazing what you can do by simply tapping an app on your smart phone or tablet. The people who create these apps are in huge demand these days. A career in this field requires someone with a combination of equal parts computer savvy and creative talent. Also crucial is an ability to thrive in a team setting. A successful app is usually created by an entire team that shepherds it from the concept stage to a functioning, glitch-free computer program.

SKILL SETS: Complex Problem Solving, Programming, Systems Analysis, Judgment and Decision Making, Systems Evaluation

ROBERT CAMPBELL

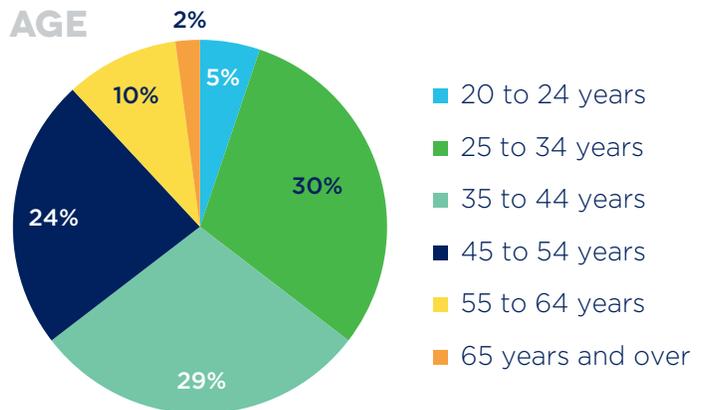
Lead software engineer at National Credit Center

Job descriptions are changing, from software developers to software engineers. It's not just programming; it's about having the analytical skills to recognize what's actually happening and then coming up with new ways to address those issues. If you get into this field, you really need to make sure that you like software development. I see those who are in it for a paycheck, and they don't last long.

SALARY POTENTIAL



AGE



OTHER JOB TITLES: Application Integration Engineer, Business Systems Analyst, Computer Consultant, Programmer Analyst, Software Architect, Technical Consultant



JOSH MAXWELL

Partner at Hone Maxwell LLP

One big growth area is that of an IT auditor, which is where you are auditing the systems and processes to ensure results. With automated systems, you have to make sure the outputs can be trusted. It is a unique area where you need both IT skills and auditing skills. Another area of growth is international tax, where new laws, such as the Foreign Accountability Tax Compliance Act, are causing problems for small- and medium-sized businesses. For all these jobs, the place to start is in public accounting.



PROJECTED
GROWTH
2014–2024

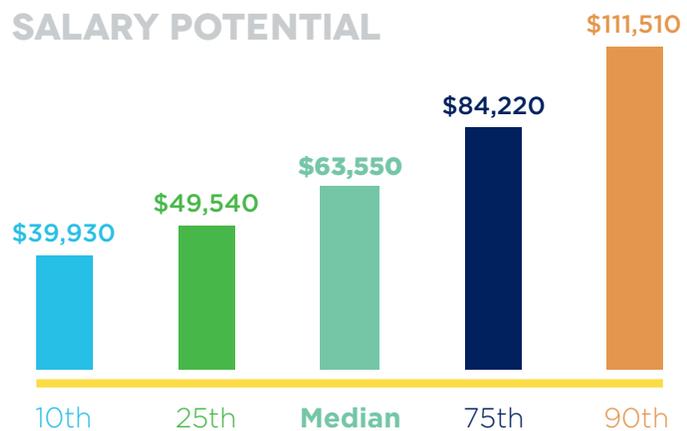
10.7%

Accountants and Auditors

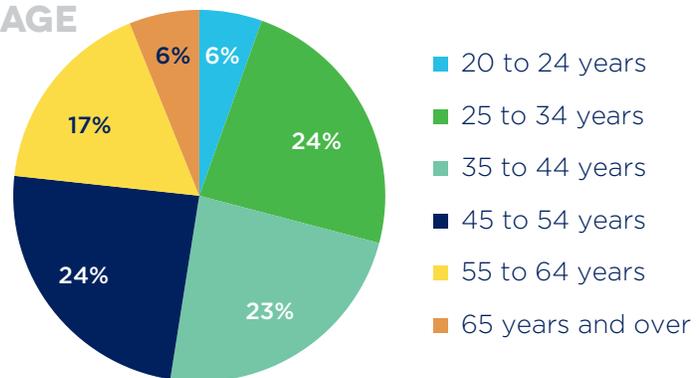
An affinity for math and an obsession with reading the fine print will help you succeed in this career. Accountants and auditors might not have the sexiest jobs, but almost everyone—from the chief executive of a Fortune 500 company to a single person filing a tax return—needs their services. Accountants help monitor a business's balance sheet; help clients prepare financial documents and file tax returns; offer guidance on how to comply with various financial regulations; and help with a variety of other things. The jobs require a detailed understanding of complex laws related to taxes and finance.

SKILL SETS: Active Listening, Mathematics, Reading Comprehension, Writing, Critical Thinking, Speaking, Active Learning

SALARY POTENTIAL



AGE



OTHER JOB TITLES: Strategic Resource Manager, Internal Consultant, Environmental Accountant, Forensic Accountant, Assurance Services Provider, International Accounting Specialist

Computer Systems Analysts

Computer systems analysts help design an organization’s computer network in a way that helps the organization run as efficiently as possible. These jobs might involve installing a new information technology or IT system, upgrading an existing IT system, training employees to use a particular IT system, or all of these things. Most of these analysts specialize in computer systems designed for a particular field, such as the medical industry or financial industry. A systems analyst often spends significant time with a company’s management to understand better how the company works and how an IT system will help improve productivity.

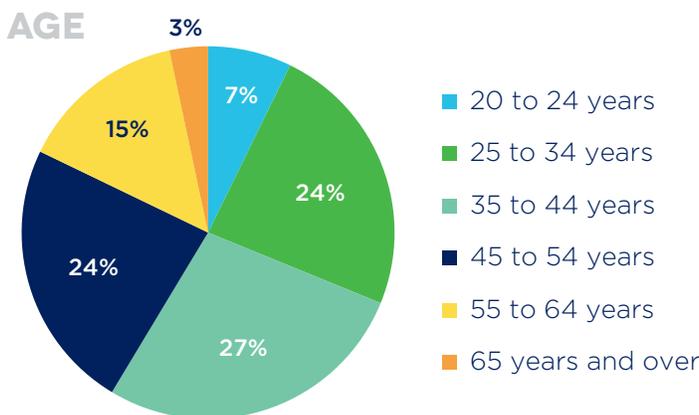
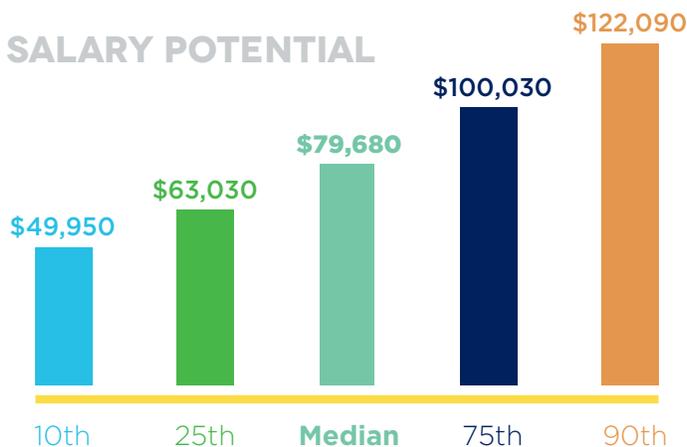
SKILL SETS: Critical Thinking, Active Listening, Reading Comprehension, Speaking, Systems Analysis



RYAN INMAN

Director of network services at ScaleMatrix

“The biggest trend that has been going on for the past decade is virtualization (which is the creation of a virtual, rather than actual, version of something, such as a server). Now automation skills are increasingly in demand. That’s because when you do virtualization for a computer system, there are a ton of things you have to do over and over again. Automation allows you to apply something once and it will change everywhere throughout the system, increasing productivity and efficiency. Because of automation, computer systems analysts have to do more scripting and writing code for applications and some of it can feel like it should be a software developer’s job.”



OTHER JOB TITLES: Applications Analyst, Business Analyst, Computer Analyst, Computer Systems Consultant, Systems Engineer





CHRIS PRYOR

Director of patient care systems at Sharp HealthCare

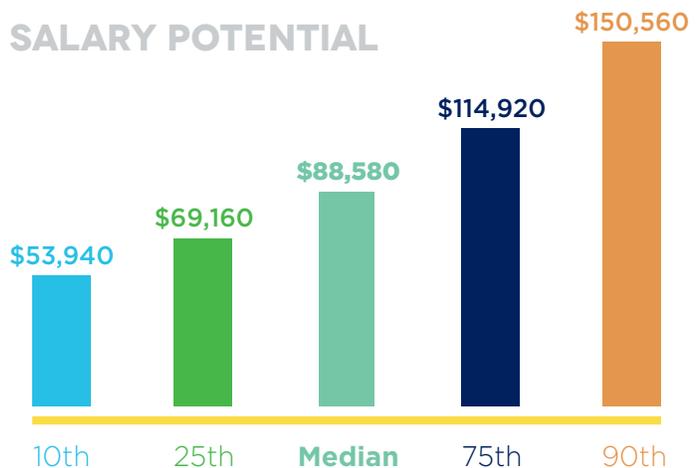
Medical and Health Services Managers

These jobs involve managing a healthcare facility or a particular department within a facility, and there is increasing opportunity in the growing area of healthcare IT. Most managers work in hospitals, group practices, nursing homes, and similar facilities. These jobs require a variety of skills and expertise. Managers must stay abreast of constant changes in healthcare regulations and technology while also possessing the people skills necessary to be effective supervisors.

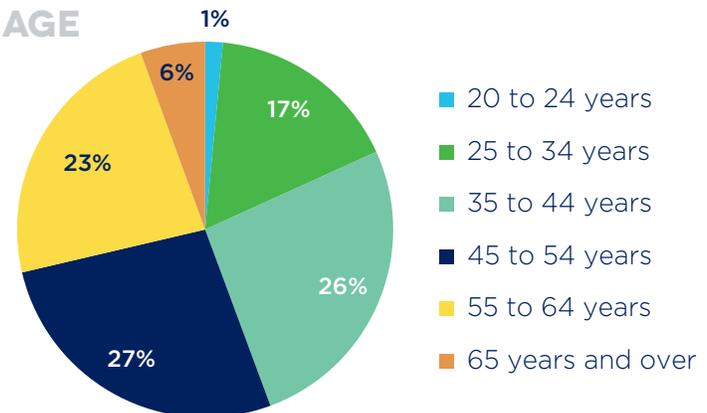
SKILL SETS: Reading Comprehension, Speaking, Active Listening, Critical Thinking, Judgment and Decision Making

There is a growing demand for IT skills in health care to deliver applications and data to clinicians to improve care. The big areas are anything in cybersecurity; anything in data analytics where you pull different sources of data; and anything in mobile app programming as we offer up more personalized health care. Honestly, anyone in this field needs to have a clinical background. Clinicians who can translate that knowledge into technology are golden. As manager, I can't get enough clinicians who have an understanding of IT. I can teach the IT stuff; it's the clinical skills I need.

SALARY POTENTIAL



AGE



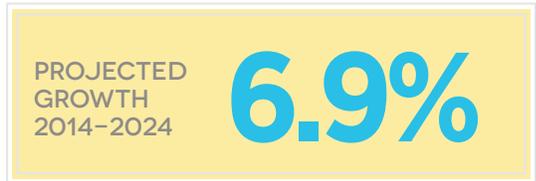
OTHER JOB TITLES: Hospital Administrator, Clinical Director, Mental Health Program Manager, Nurse Manager, Nutrition Services Manager, Program Manager

Sales Representatives

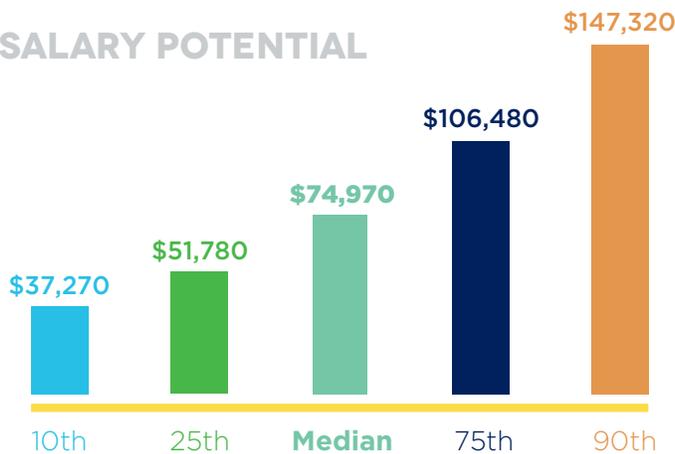
WHOLESALE & MANUFACTURING,
TECHNICAL & SCIENTIFIC PRODUCTS

These jobs require a passion for making sales combined with a high level of expertise about the products you're selling. People in this field might sell pharmaceuticals, surgical equipment, computers, or engineering supplies. To pitch these products, you must know everything about what they do and how they work. You must be able to talk with conviction and authority about why your products are worth buying—and why they're better than the competition's products. As a result, these jobs often require a high level of education and/or training.

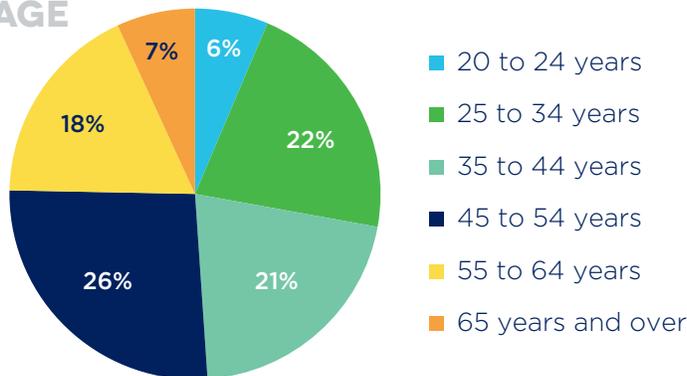
SKILL SETS: Persuasion, Speaking, Active Listening, Negotiation, Social Perceptiveness



SALARY POTENTIAL



AGE



OTHER JOB TITLES: Account Executive, Distribution Sales Manager, Marketing Representative



KATELYN LAU

Pharmaceutical sales consultant at Shionogi Inc.

“Being in pharmaceutical sales is like going back to school. When I started my job, I spent November and December studying and taking tests. I stepped away from selling advertising because it was becoming more automated. I wanted to move into an industry like medicine because you can find more career longevity. While medicine is changing and changing very quickly, this industry is not going away any time soon. There is going to be a huge shift, especially in San Diego, to biotech and the biosciences. Once you are in the industry and you have the knowledge and are a proven sales person, you are set up and you can control your own career.”



PROJECTED
GROWTH
2014-2024

13.6%



MAUREEN JUGAR

Supervising management analyst at the City of San Diego

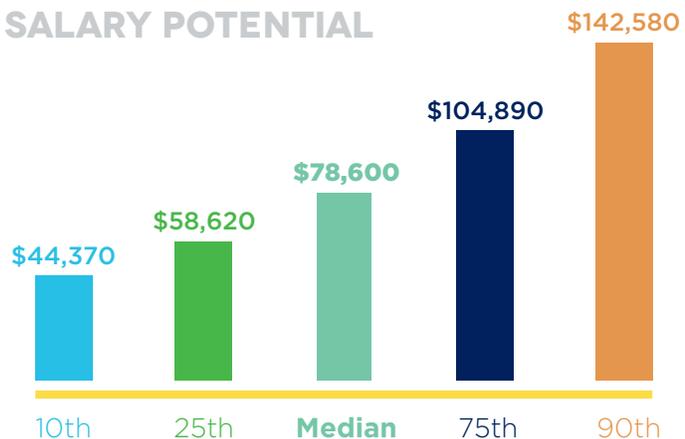
My background is in business management and psychology, but it helps to have a wide-range of interests and knowledge and be able to work with people at all levels of the organization. I say that we as management analysts have to be universal soldiers who know enough about what's going on in a variety of areas to stay two steps ahead of folks. We are considered the internal consultants to the city so we can find ways to improve efficiencies. Project management and statistics are some important skills to possess, as are programs like Lean Six Sigma. My team recently went through the black belt program so we could bring back that culture to the city.

Management Analysts

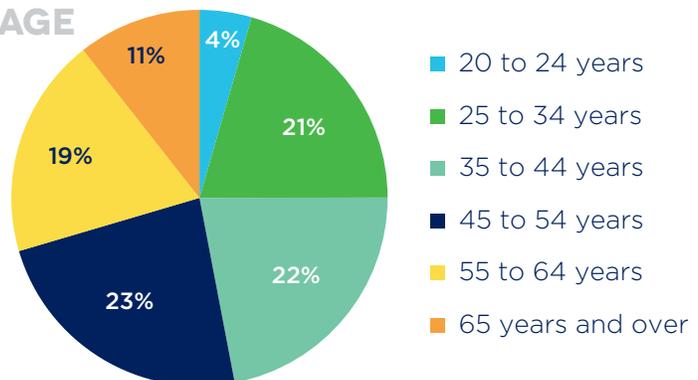
Sometimes a company's top executives need someone to help guide them in making the business run better. This is where a management analyst comes in. These analysts look for ways to improve a company's internal operations as a means of boosting performance and profits. Sometimes these analysts work for the company and sometimes they are hired as outside consultants. In either case, they are often required to scrutinize the tiniest details of a company's operations, from its management flow chart to its financial data. The goal is to spot inefficiencies and improve a company's performance.

SKILL SETS: Active Listening, Reading Comprehension, Speaking, Critical Thinking, Complex Problem Solving

SALARY POTENTIAL



AGE



OTHER JOB TITLES: Administrative Analyst, Business Analyst, Employment Program Analyst, Quality Control Analyst

Market Research Analysts and Marketing Specialists

If you're fascinated by human behavior, or you have a knack for capturing someone's attention, this might be the career for you. These jobs are all about convincing customers to buy a product or service. Market research analysts spend their time studying data that might help a company connect with customers. This data could be anything from demographic databases to charts analyzing consumers' shopping habits. Marketing specialists are experts in crafting messages and choosing the right promotional strategies, whether it's a TV ad or a social-media campaign.

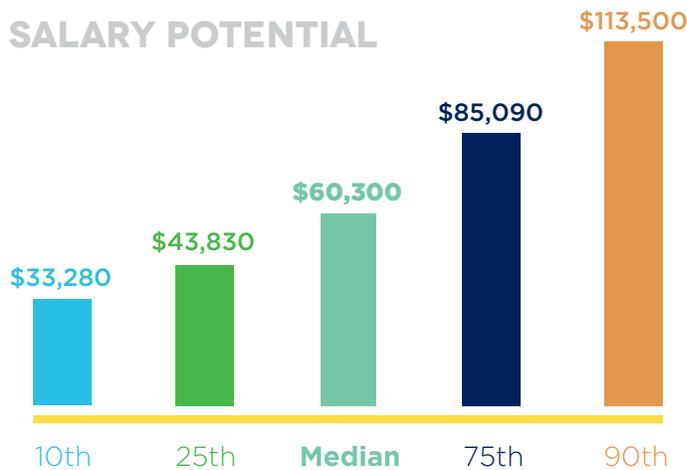
SKILL SETS: Reading Comprehension, Active Listening, Complex Problem Solving, Critical Thinking, Judgment and Decision Making



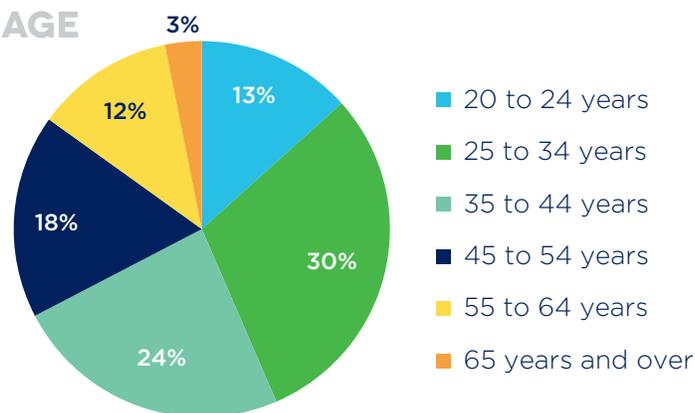
LAUREN ALEXANDER
Executive vice president of marketing at Underground Elephant

Data analysis is so much more in demand, and I work with software developers much more than I do with so-called creative types. A new job we have at Underground Elephant is creative-development coordinator. These jobs develop new ideas and then research their viability. It is hybrid between creative and strategy. My advice to anyone interested in marketing is to pay attention in math class, even if you don't think you'll ever use it. I'm shocked at how much of my life is becoming that stat class that I didn't pay attention to in college.

SALARY POTENTIAL



AGE



PROJECTED GROWTH 2014-2024 **18.6%**

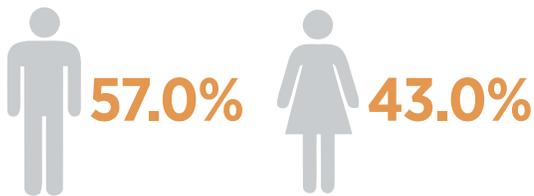
OTHER JOB TITLES: Market Impact Associate Consultant, Business Development Specialist, Communications Specialist, Market Analyst, Market Research Consultant, Product Line Manager, Project Manager



DANIEL GOLDZBAND

Engineering financial analyst at Pratt & Whitney AeroPower

Financial analysis work has typically fallen into two categories—internal and external. Internal financial analysts are employed by operating companies and work with management and operations staff to support corporate decision-making. External financial analysts are employed by investment firms, mutual funds, and analyze the financial performance and condition of current and prospective investment candidates. External analysis jobs haven't changed much, as the investing process has fundamentally remained the same for decades. However, internal financial analysis is tending more toward large-scale data analysis as companies become more proficient at gathering greater and greater amounts of data, such as operating data and market data.



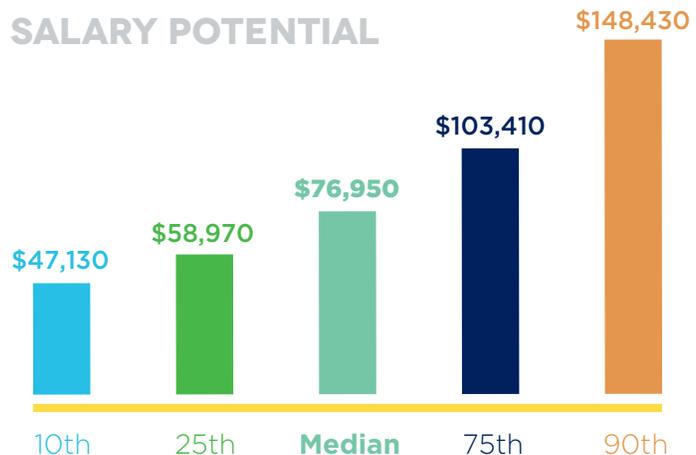
OTHER JOB TITLES: Credit Products Officer, Equity Research Analyst, Investment Analyst, Operational Risk Analyst, Planning Analyst, Real Estate Analyst, Research Analyst, Securities Analyst

Financial Analysts

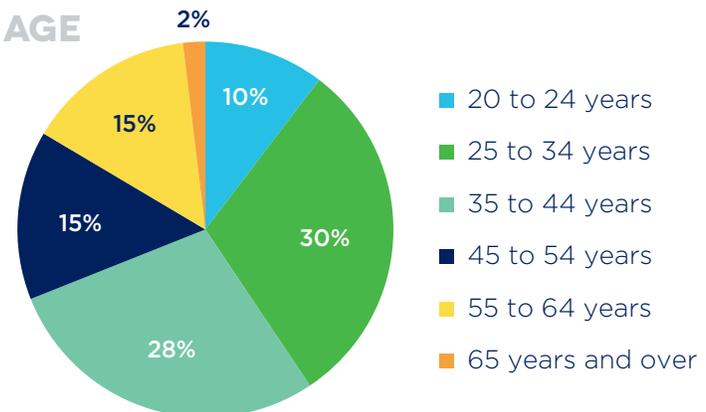
Financial analysts are experts in forecasting how a particular business, industry, or even the economy, might perform. These analysts play a critical role in helping the world's largest players in the financial industry—banks, pension funds, insurance companies—invest their money. Some financial analysts advise clients on where to put their money, whether it be in stocks or bonds or other investment vehicles. Other analysts devise particular investments to sell to clients looking for ways to invest. Often, these analysts will specialize in a particular industry or business. All financial analysts must be adept at analyzing mountains of data and spotting economic trends.

SKILL SETS: Critical Thinking, Reading Comprehension, Writing, Speaking, Active Listening

SALARY POTENTIAL



AGE



PROJECTED
GROWTH
2014-2024

11.7%

Information Security Analysts

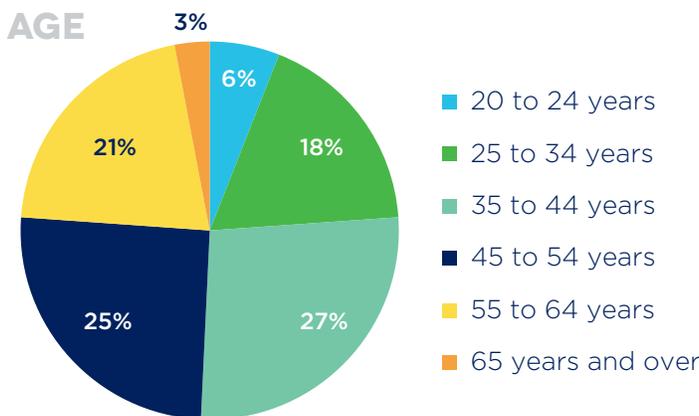
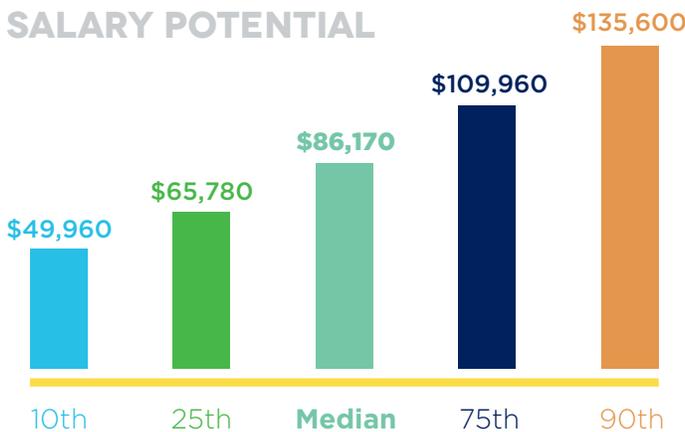


In a world full of computer hackers, it is the job of an information security analyst to protect an organization’s computer network from breaches. These analysts play a more critical role than ever, given the rising number of cyber attacks across the globe. These analysts work for almost every large agency that has a secure computer network—and many small agencies, too. They help protect every imaginable type of confidential information, from emails to medical records to bank account numbers.

SKILL SETS: Critical Thinking, Reading Comprehension, Complex Problem Solving, Speaking, Active Listening



STEPHAN CHENETTE
Cofounder and CEO at AttackIQ Inc.



“There is so much demand for talent in the cybersecurity space right now. A massive area of growth is for infinite-response analysts. Companies are being attacked so often they need people who understand the different types of attacks and all the products that are available. You see companies that are buying 75 different cybersecurity products, and these infinite-response analysts understand how to seamlessly integrate or stitch all that technology into a company’s operations. If there were a candidate with those skills, he or she would be hired within a day.”

OTHER JOB TITLES: Computer Specialist, Data Security Administrator, Information Security Manager, Information Security Officer, Information Systems Security Analyst, Information Technology Security Analyst, Information Technology Specialist



BROOKE EMERY

Assistant project manager at the California Department of Transportation

As infrastructure continues to age, civil engineers will be needed to manage projects to rebuild bridges; repair roads, ports, railways; and upgrade levees and dams. Quality of life and safeguarding the environment are important and will continue to become more prominent. As the population continues to grow, civil engineers will also be needed to make the infrastructure multimodal and more suitable to mass transit. As technology continues to advance, so will the engineering field. Intelligent infrastructure (such as smart chips, embedded sensors) will have us making technological improvements that rely more on living databases, with real-time access ensuring informed decisions are made.



PROJECTED
GROWTH
2014-2024

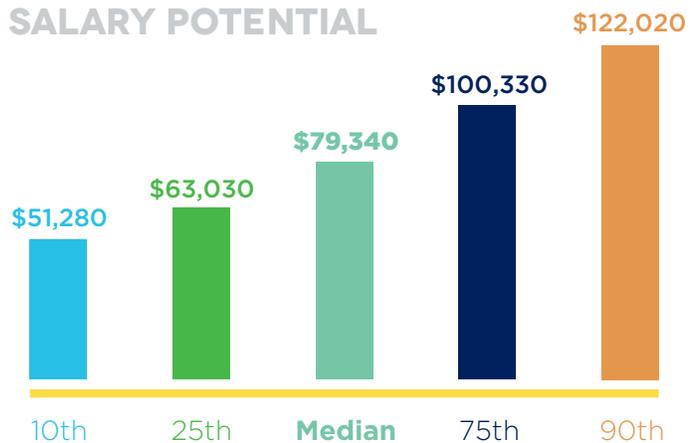
8.4%

Civil Engineers

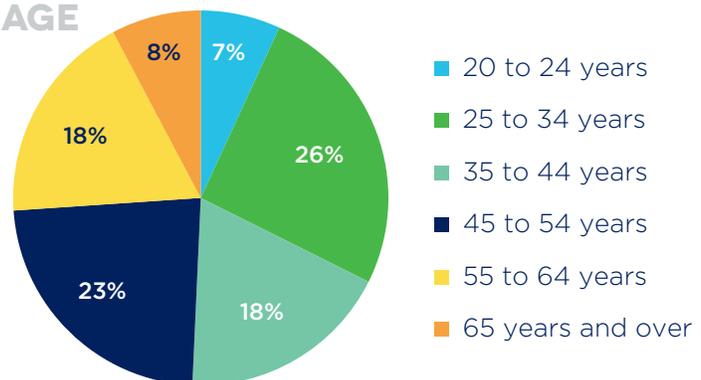
Civil engineers help design and build bridges, tunnels, roads, dams, skyscrapers, water treatment plants, and other facilities. These engineers play a critical role in virtually every type of construction, whether in the public or private sector. Civil engineers also help maintain these structures after they're built. A career in this field usually involves spending a lot of time wearing a hard hat while standing on a construction site and monitoring the work firsthand.

SKILL SETS: Reading Comprehension, Active Listening, Complex Problem Solving, Mathematics

SALARY POTENTIAL



AGE



OTHER JOB TITLES: Geotechnical Engineer, Coastal Engineer, Earthquake Engineer, City Engineer, County Engineer, Project Engineer, Traffic Engineer

RESEARCH TEAM

DR. JOSH SHAPIRO

Dr. Josh Shapiro is the director of research and evaluation at the Center for Research on the Regional Economy at UC San Diego Extension. His current evaluation projects cover a wide range of topics, including health care, advanced manufacturing, STEM education, and the role of philanthropy in economic development. He has worked on a number of labor market and innovation reports, including a grant from the National Science Foundation on the role social and cultural dynamics play in regional economic development. Dr. Shapiro was one of the core evaluators on the effectiveness of the Department of Labor's \$500 million WIRED initiative, which involved 15 regions across the United States. He also leads Extension's market research team, which focuses on assisting educational programs to conduct market research and curricula development for workforce and education training programs. Dr. Shapiro has taught classes on research methodology for UC San Diego and is trained in both qualitative and quantitative methodologies with a specialization in survey design. Before attending graduate school, Dr. Shapiro worked in the conflict resolution field in Washington D.C., served as a public school teacher in South Carolina, and built homes with Habitat for Humanity in Louisiana. Dr. Shapiro holds a Ph.D. and M.A. in sociology from the UC San Diego and a B.A. in social thought and analysis from Washington University in St. Louis.

GLADYS BUSTOS-SELFRIIDGE

Gladys Bustos-Selfridge is a research associate with UC San Diego Extension. She has led numerous outreach surveys, interviews, and focus group efforts. Selfridge has experience working with workforce agencies, education systems, high school districts, community colleges, and universities. She has spearheaded efforts to expose jobseekers to careers in the manufacturing sector, collaborating with industry, workforce centers, educators, and other stakeholders. Bustos-Selfridge was one of the project managers and researchers in the 2012 San Diego Regional Manufacturing Sector Report funded by the San Diego Workforce Partnership, which involved interviewing more than 280 manufacturers. She made strong contributions to the South and East County Comprehensive Economic Development Strategy (CEDS) and has provided expertise to SANDAG for their 2012 Traded Industry Clusters in the San Diego Region report. She earned her bachelor's degree at UC San Diego, graduating with honors in 2009.

GINA CARTON

Gina Carton is a research associate with UC San Diego Extension. She has experience conducting research on a variety of topics, ranging from workforce development to education. She earned her bachelor's degree in political science at UC San Diego.



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