

The Little Rock Regional Chamber is working to achieve alignment between labor supply and industry demand within our region’s key industry sectors as part of our continued efforts to grow and strengthen the workforce in Central Arkansas. Toward that end, we conducted a supply/demand analysis informed by Emsi labor market analytics and a focus group discussion with regional information technology employers.

This document shares the results of that discussion and analysis in order to provide the region’s leaders in government, business, non-profit and education with a data-driven assessment of our region’s IT workforce. This assessment is intended to inform labor market investment, policy, and training and curriculum strategy for our region moving forward.

COMPUTER OCCUPATIONS IN LITTLE ROCK MSA			
<p>9,491 Jobs Jobs decreased by 352 over the last 5 years. Projected to increase by 36 over the next 5 years.</p>	<p>0.91 Concentration Regional job concentration is 0.91 times the national job concentration.</p>	<p>\$32.07/hr Median Earnings Regional median earnings are \$7.59/hr below the national median earnings of \$39.66/hr.</p>	<p>329 Educational Completions Related educational completions are produced by 8 institutions in the region.</p>

SHORT-TERM, IN-DEMAND JOBS & SKILLS

In-Demand Jobs

- The most in-demand jobs are software engineer, web developer, cyber security, and a full stack developer

In-Demand Skills

- PHP, Ruby, Python, .net, CISSP cyber security certification and certified ethical hackers
- The ability to jump between languages – an “architect” is in demand. Many companies are only hiring architects
- Coders, developers and designers with intermediate skills are in demand in Little Rock – entry level is easier to find – but someone that has mastered a single language is difficult to find
- Practical thinking rather than programmatic to adapt to the rapid rate of change – college recruits have been taught to code, but not to think

SHORT-TERM, RECRUITING STRATEGY/LABOR POOLS

- Indeed, LinkedIn, word-of-mouth
- Companies prefer to hire locally, but experienced local talent is difficult to find – entry-level candidates right out of college are a little easier to find
- Companies are leveraging their culture and brand to drive success in recruiting the best talent
- Companies have helped establish programs at local colleges and still the rate of change within the industry cannot be accommodated within the education system alone – students need practical work experience from the classroom (business cases)
- Companies like to see candidates who are using “open source” platforms prior to hiring them
- Companies will also conduct proof-of-concept tests as part of the interviewing process to determine if a candidate actually did the work and to ascertain if the quality is what they think it is
- Local success will drive talent, so we need to grow and brand ourselves as awesome companies who build awesome things
- We’ve got to develop raw talent and incubate them and nurture them like a baby, it’s imperative we find ways to grow talent locally
- Entrepreneurs need collaboration with local industry to expand and grow – there is a lack of collaboration in Little Rock and collaboration feeds entrepreneurship – we need an intentional change toward this

SHORT-TERM, TRAINING

- Paired coding is a great way to train (all boats rise together)
- The industry needs candidates from each level of training – both degreed and from boot camps
- Shorter boot camps are desirable simply because they can be easily and quickly adjusted to shift with the trends – more like a continued education with work experience component
- Where someone gets a degree doesn't matter, what matters is if they can demonstrate success
- The distance between new developers and tenured developers is getting farther apart
- There seems to be little formalized internal training within companies but rather employees teach themselves – having established community meet-ups for this type of learning would be beneficial

MEDIUM-TERM

Operational/Regulatory/Technology Implementations

- Increased regulatory/compliance to small business and non-profits driven by Cyber
- Cyber insurance will grow

Changing Skills and Training Requirements

- Data visualization, data mining and know how that makes the business more effective
- Cyber security
- Internet of Things (IOTs) integration
- There is an onboarding gap – internships should be used to close the gaps – we need to get students into work three to five years earlier
- The industry needs more “thinkers” rather than the “programming” that is being taught
- Programming will be more robotic – commoditized
- Adjust the learning environment to reflect what the work space will look like – social skills, thinking skills, team skills, critical thinking
 - Fundamental change to education industry
 - Project-based and solution-based business scenarios
- Schools aren't prepared to implement the needed programs – business must engage with schools

Internal Training/Recruitment

- Career exposure to local industry is paramount for recruiting locally; getting students excited about what's being developed locally – making Cyber cool and fun

Trends

- Contract and remote workers are being used to varying degrees depending on the company – millennials want to come and go but some companies want dedication and investment and don't offer it.
 - Longer-term trajectory is caring about the customer – you get deep roots by working inside the business and not remotely
- Blockchain

LONG-TERM OUTLOOK

Disruptive Industry Trends

- Block chain
- Artificial intelligence

New Job Categories

- Artificial Intelligence machine learning algorithm
- Internet of Things as its own job category
- Deeper specializations
- Broad generalists – someone with business acumen that can reverse engineer with the customer in mind

ADDITIONAL COMMENTS

- The region needs more women in Cyber Security
- Need to add more education around Cyber

AREAS OF OPPORTUNITY

- We need a progressive branding website for Little Rock to raise awareness and shifts perceptions showcasing what a great place Little Rock is to live
- There is great talent in rural Arkansas that we aren't attracting – we need to reach out and harness that potential talent – for those students, going to Little Rock is a big trip and there is large opportunity for attraction
- National Think Tank Programs exist in the community and the local industry should consider tapping into them
- The insurance sector is also making investments in artificial intelligence to address the need for data mining – the industry needs master level data specialists – regionally, it's hard to find data talent and actuaries
- Collaborations need to occur among the insurance sector, hospitals, and data companies on data mining and predictive analytics

AREAS FOR GROWTH

- IT jobs not in the IT sector, in hospitals for instance, are more stable with minimal turnover – that can stifle innovation but maintains consistency – hospitals are looking to shift how they engage with patients via technology and will need innovative IT workers who don't necessarily have a medical background
- The insurance sector has low turnover within its IT departments – they are making investments in cyber security due to the shortfall in that area and are looking for both entry-level and experienced candidates in that field

DATA APPENDICES

1. Computer Occupations Data Overview (*Pages 4-7*)
2. Software Developers and Programmers Job Posting Data & Analytics (*Pages 8-10*)
3. Computer & Information Analysts Job Posting Data & Analytics (*Pages 11-13*)

FOR MORE INFORMATION

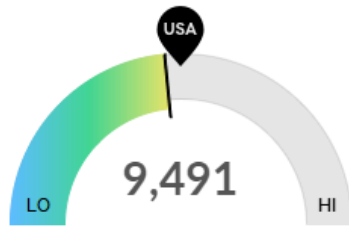
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DATA APPENDIX 1 – COMPUTER OCCUPATIONS OVERVIEW

Computer Occupations (15-1100)
Little Rock-North Little Rock-Conway MSA
Source: Emsi Data Analyst

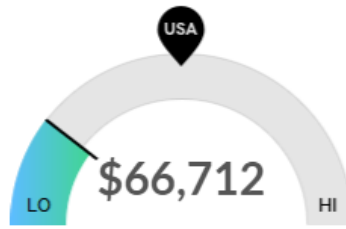
EXECUTIVE SUMMARY

Light Hiring Competition Over an Average Supply of Regional Talent



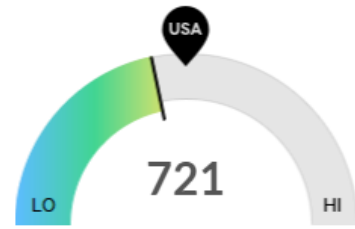
Supply (Jobs)

Little Rock MSA is about average for this kind of talent. The national average for an area this size is 10,379* employees, while there are 9,491 here.



Compensation

The cost for talent is low in Little Rock MSA. The national median salary for Computer Occupations is \$82,483, while you'll pay \$66,712 here.



Demand (Job Postings)

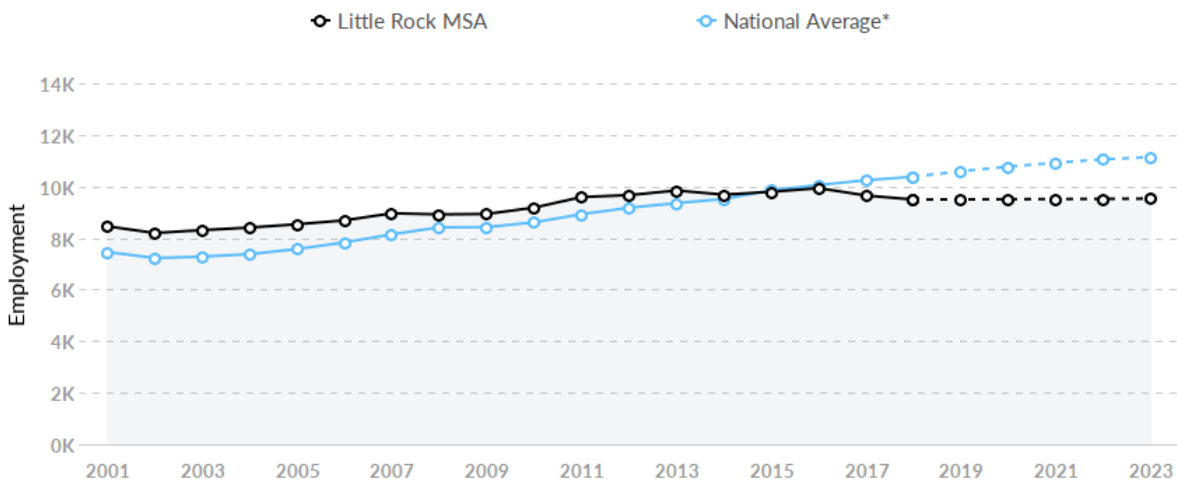
Competition from online job postings is low in Little Rock MSA. The national average for an area this size is 876* job postings/mo, while there are 721 here.

SUPPLY (JOBS)

Supply Is About Equal to the National Average

The regional vs. national average employment helps you understand if the supply of Computer Occupations is a strength or weakness for Little Rock MSA, and how it is changing relative to the nation. An average area of this size would have 10,378* employees, while there are 9,491 here. The gap between expected and actual employment is expected to increase over the next 5 years.

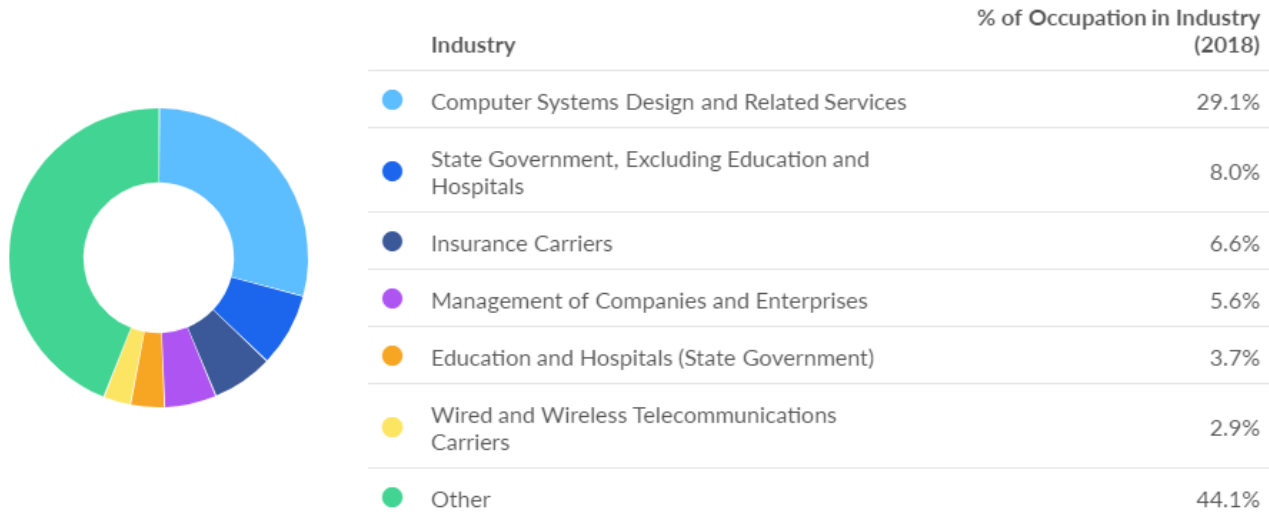
-4% Past Growth (2013 - 2018) 0% Projected Growth (2018 - 2023)



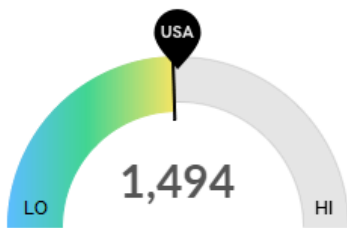
DATA APPENDIX 1 – COMPUTER OCCUPATIONS OVERVIEW (CONTINUED)

SUPPLY (CONTINUED)

Most Jobs are Found in the Computer Systems Design and Related Services Industry Sector

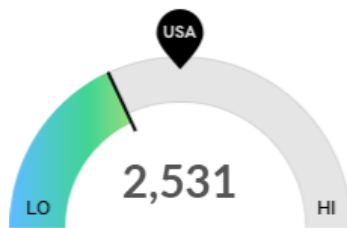


Retirement Risk Is About Average, While Overall Diversity Is Low



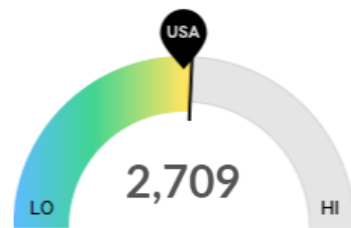
Retiring Soon

Retirement risk is about average in Little Rock MSA. The national average for an area this size is 1,536* employees 55 or older, while there are 1,494 here.



Racial Diversity

Racial diversity is low in Little Rock MSA. The national average for an area this size is 3,921* racially diverse employees, while there are 2,531 here.



Gender Diversity

Gender diversity is about average in Little Rock MSA. The national average for an area this size is 2,594* female employees, while there are 2,709 here.

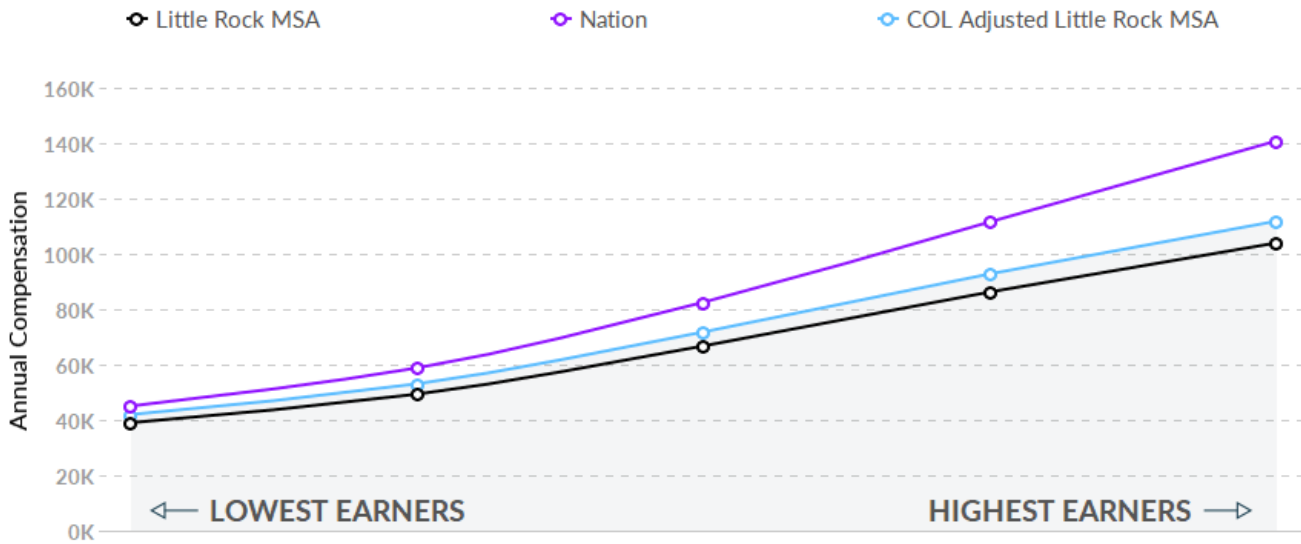
*National average values are derived by taking the national value for Computer Occupations and scaling it down to account for the difference in overall workforce size between the nation and Little Rock MSA. In other words, the values represent the national average adjusted for region size.

DATA APPENDIX 1 – COMPUTER OCCUPATIONS OVERVIEW (CONTINUED)

COMPENSATION

Talent Is 19% Cheaper, While the Cost of Living May Make Attraction Difficult

In 2017, the median compensation for Computer Occupations in Little Rock MSA is \$66,712. Based on the national median wage of \$82,483 for this position, this means you will spend about 19% less to employ Computer Occupations here. However, their actual purchasing power will be 13% less than the national median when we adjust for regional cost of living (which is 7% lower than average). This may make it harder to attract talent to the region at this price.



DEMAND



1,919 Employers Competing

All employers in the region who posted for this job during the last 12 months.



8,646 Unique Job Postings

The number of unique postings for this job over the last 12 months.

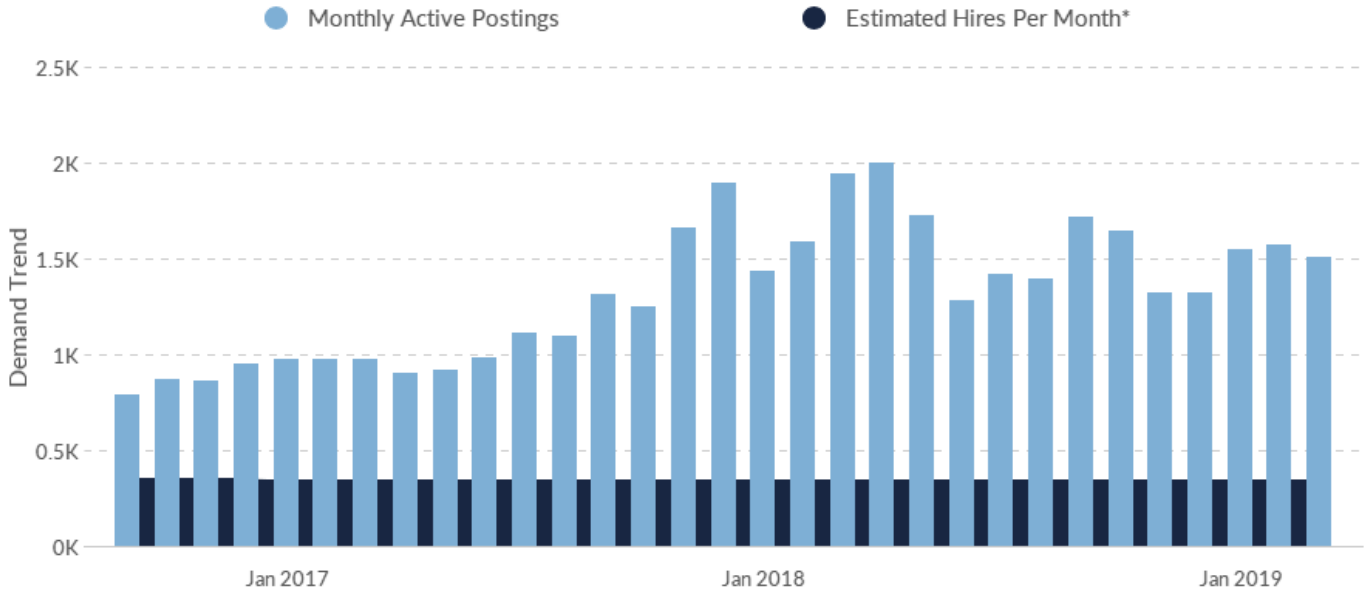


25 Days Median Posting Duration

Posting duration is 3 days shorter than the regional median.

DATA APPENDIX 1 – COMPUTER OCCUPATIONS OVERVIEW (CONTINUED)

DEMAND (CONTINUED)



*A hire is reported by the Quarterly Workforce Indicators when an individual's Social Security Number appears on a company's payroll and was not there the quarter before. Emsi uses proprietary industry staffing patterns and extrapolation to estimate hires at the occupation level and below.

GRADUATE PIPELINE



17 Programs

39 programs can train for this job, while only 17 programs have produced completers in this region.



329 Completions (2017)

The completions from all regional institutions for all degree types.



670 Openings (2017)

The average number of openings for an occupation in the region is 59.

DATA APPENDIX 2 – SOFTWARE DEVELOPERS & PROGRAMMERS JOB POSTING DATA & ANALYTICS

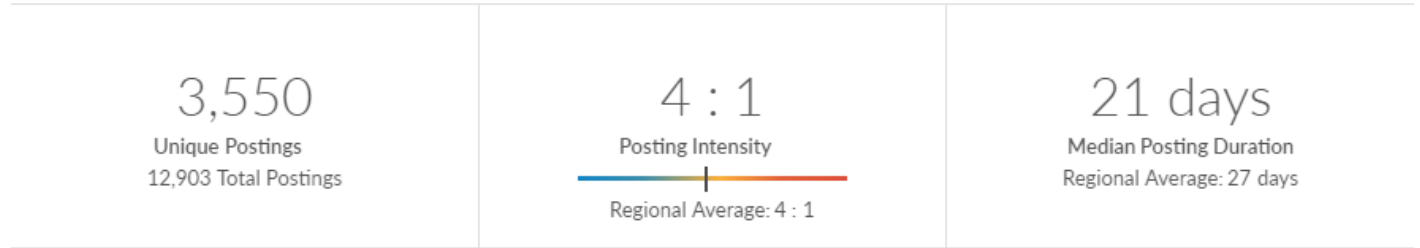
Software Developers and Programmers (15-1130)

Little Rock-North Little Rock-Conway MSA

March 2018 – March 2019

Source: Emsi Data Analyst

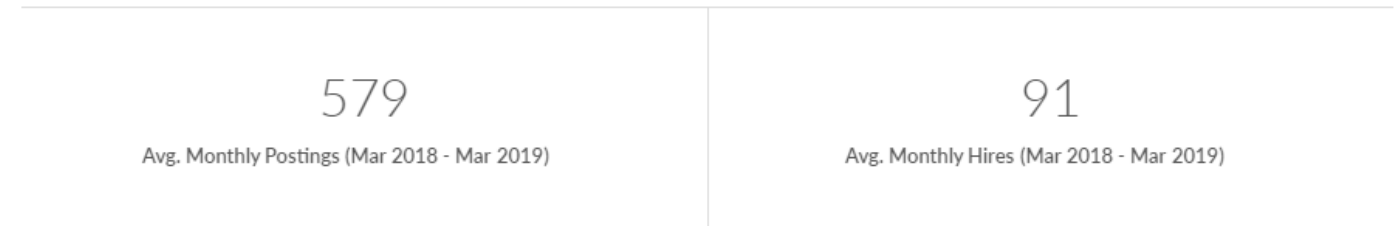
JOB POSTINGS OVERVIEW



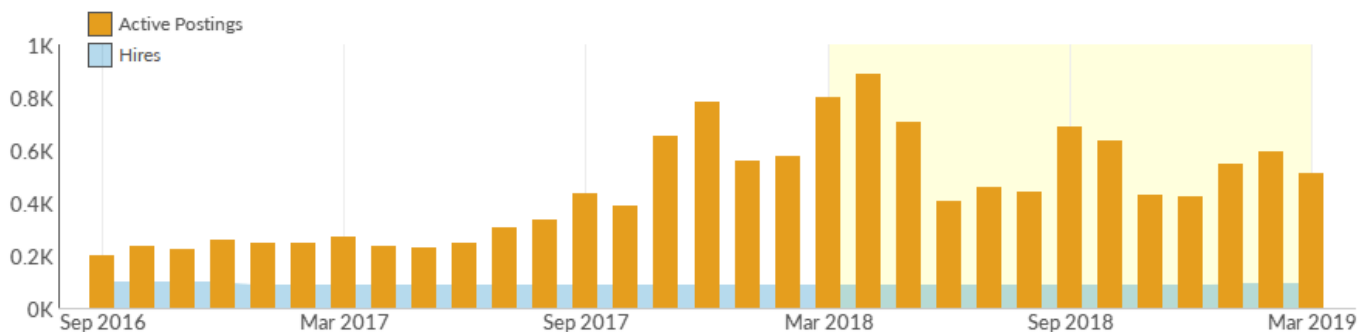
There were 12,903 total job postings for your selection from March 2018 to March 2019, of which 3,550 were unique. These numbers give us a Posting Intensity of 4-to-1, meaning that for every 4 postings there is 1 unique job posting.

This is close to the Posting Intensity for all other occupations and companies in the region (4-to-1), indicating that they are putting average effort toward hiring for this position.

JOB POSTINGS VS. HIRES



In an average month, there were 579 active job postings for *Software Developers and Programmers*, and 91 actually hired. This means there was approximately 1 hire for every 6 active job postings for *Software Developers and Programmers*.



Occupation

Avg Monthly Postings (Mar 2018 - Mar 2019)

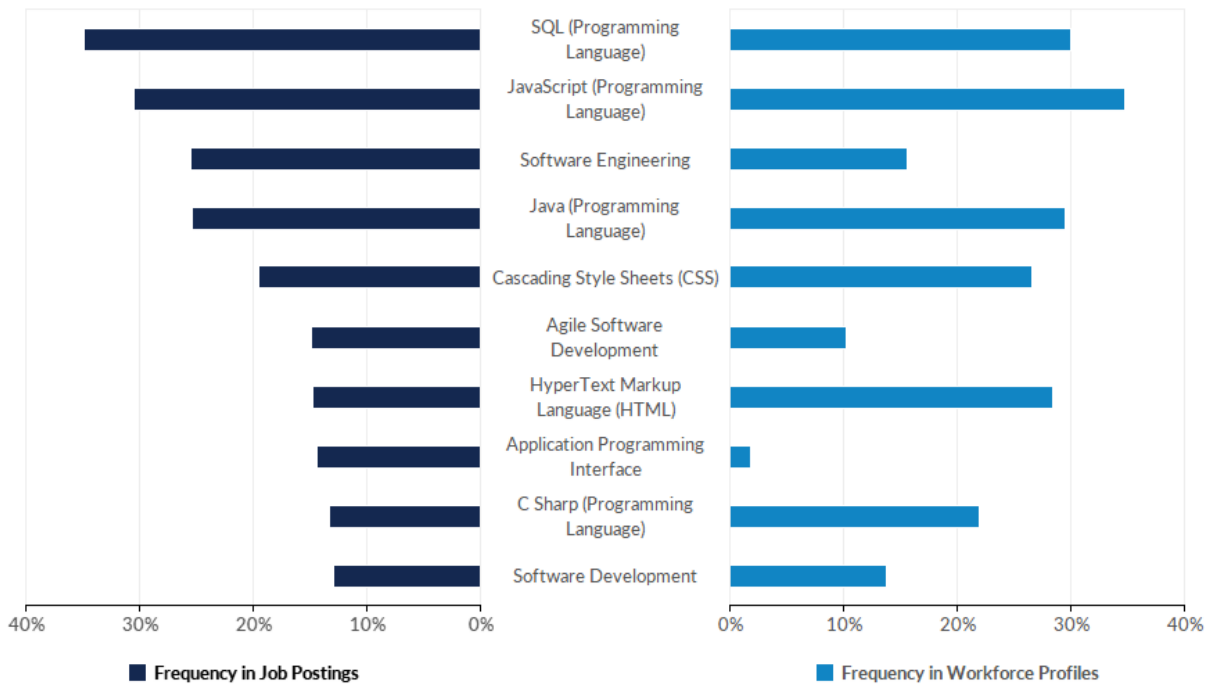
Avg Monthly Hires (Mar 2018 - Mar 2019)

DATA APPENDIX 2 – SOFTWARE DEVELOPERS & PROGRAMMERS JOB POSTING DATA & ANALYTICS (CONTINUED)

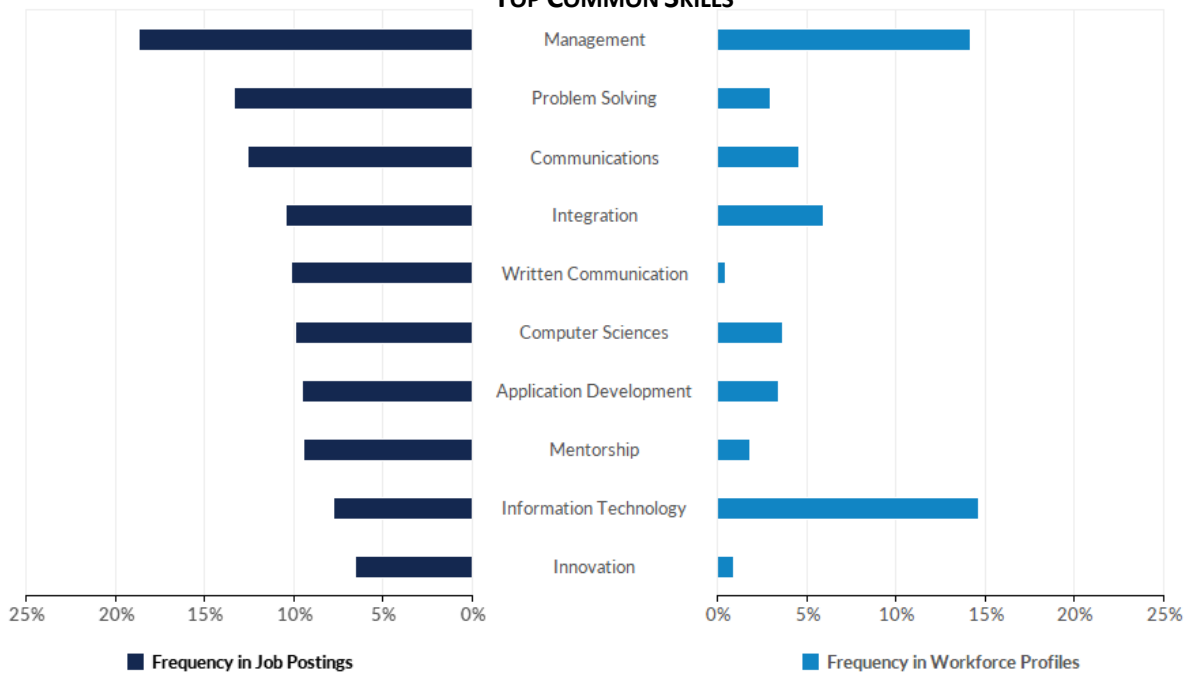
IN-DEMAND SKILLS

The following provides insight into the supply and demand of relevant skills by comparing the frequency of skills present in job postings against skills present in today's workforce. Along with Emsi's job posting analytics, this comparison leverages Emsi's dataset of more than 100M online resumes and profiles. All resumes and profiles used in these comparisons have been updated within the last three years. *The skills associated with workforce profiles represent workers of all education and experience levels.

TOP HARD SKILLS



TOP COMMON SKILLS



DATA APPENDIX 2 – SOFTWARE DEVELOPERS & PROGRAMMERS JOB POSTING DATA & ANALYTICS (CONTINUED)

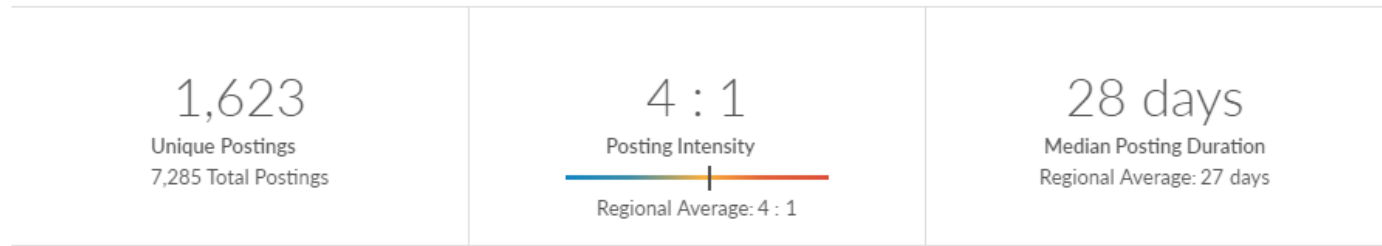
TOP QUALIFICATIONS

Qualification	Postings with Qualification
CompTIA Security+	13
Microsoft Certified Professional	9
Certified Information Systems Security Professional	8
Microsoft Certified Systems Engineer	8
Cisco Certified Network Professional	7
Cisco Certified Network Professional Voice	6
Microsoft Certified Systems Administrator (MCSA)	6
Advanced Life Support	5
Systems Security Certified Practitioner	5
Certified Coding Specialist	4

DATA APPENDIX 3 – COMPUTER & INFORMATION ANALYSTS JOB POSTING DATA & ANALYTICS

Computer & Information Analysts (15-1120)
Little Rock-North Little Rock-Conway MSA
March 2018 – March 2019
Source: Emsi Data Analyst

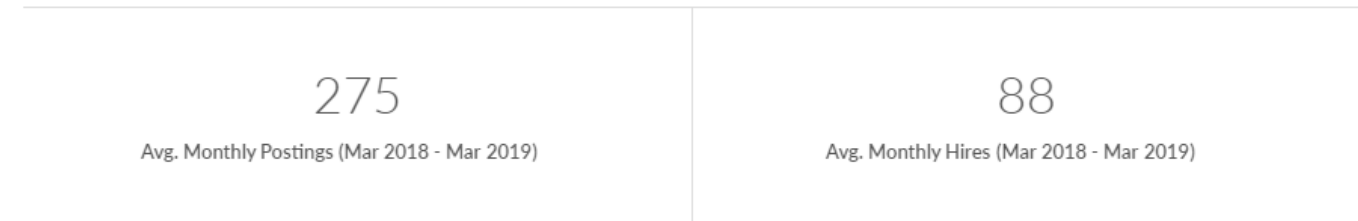
JOB POSTINGS OVERVIEW



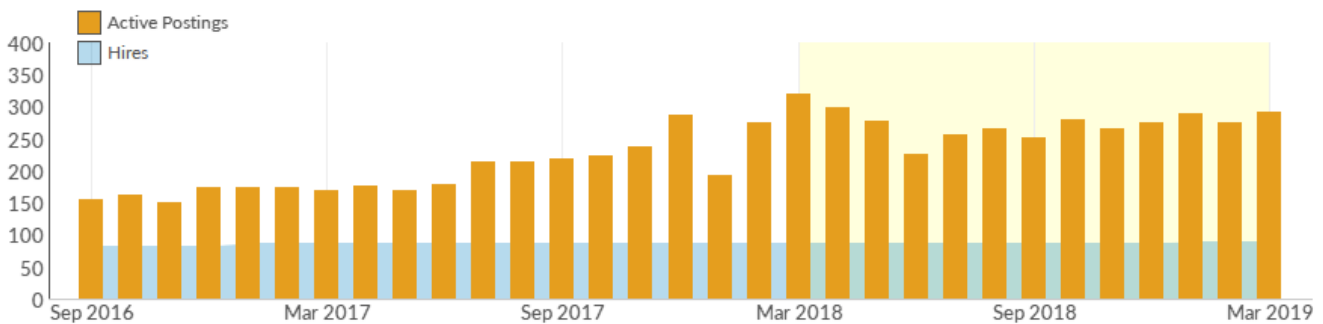
There were 7,285 total job postings for your selection from March 2018 to March 2019, of which 1,623 were unique. These numbers give us a Posting Intensity of 4-to-1, meaning that for every 4 postings there is 1 unique job posting.

This is close to the Posting Intensity for all other occupations and companies in the region (4-to-1), indicating that they are putting average effort toward hiring for this position.

JOB POSTINGS VS. HIRES



In an average month, there were 275 active job postings for *Computer and Information Analysts*, and 88 actually hired. This means there was approximately 1 hire for every 3 active job postings for *Computer and Information Analysts*.

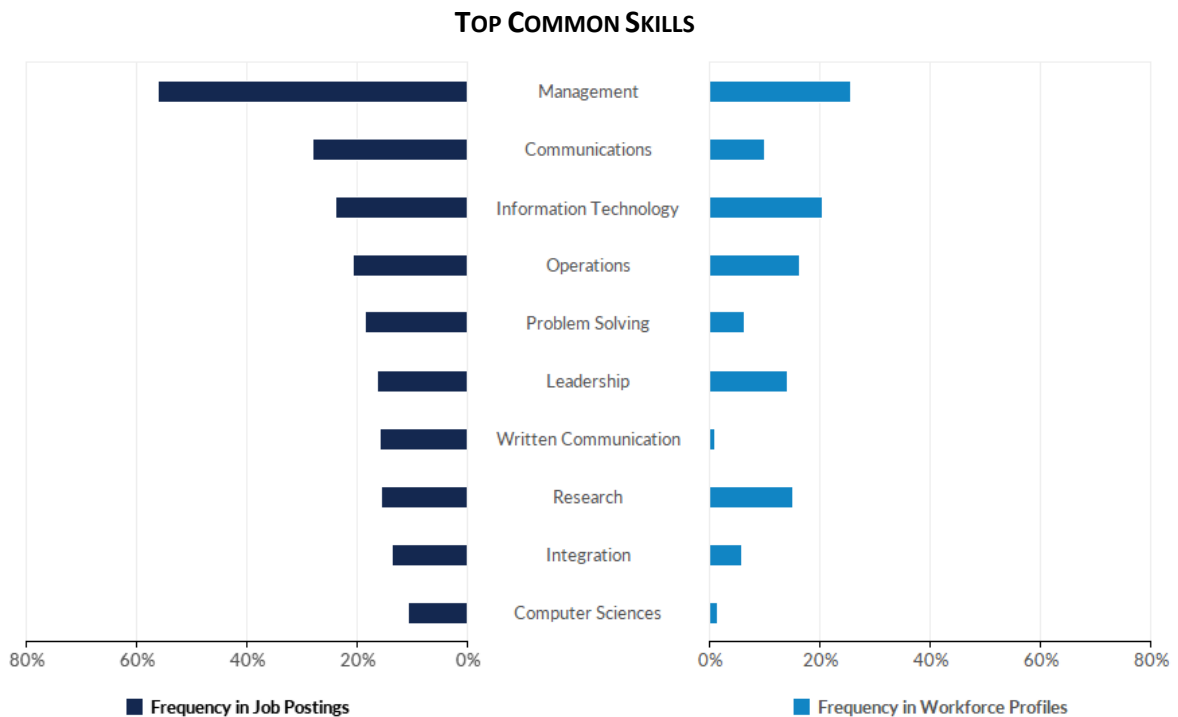
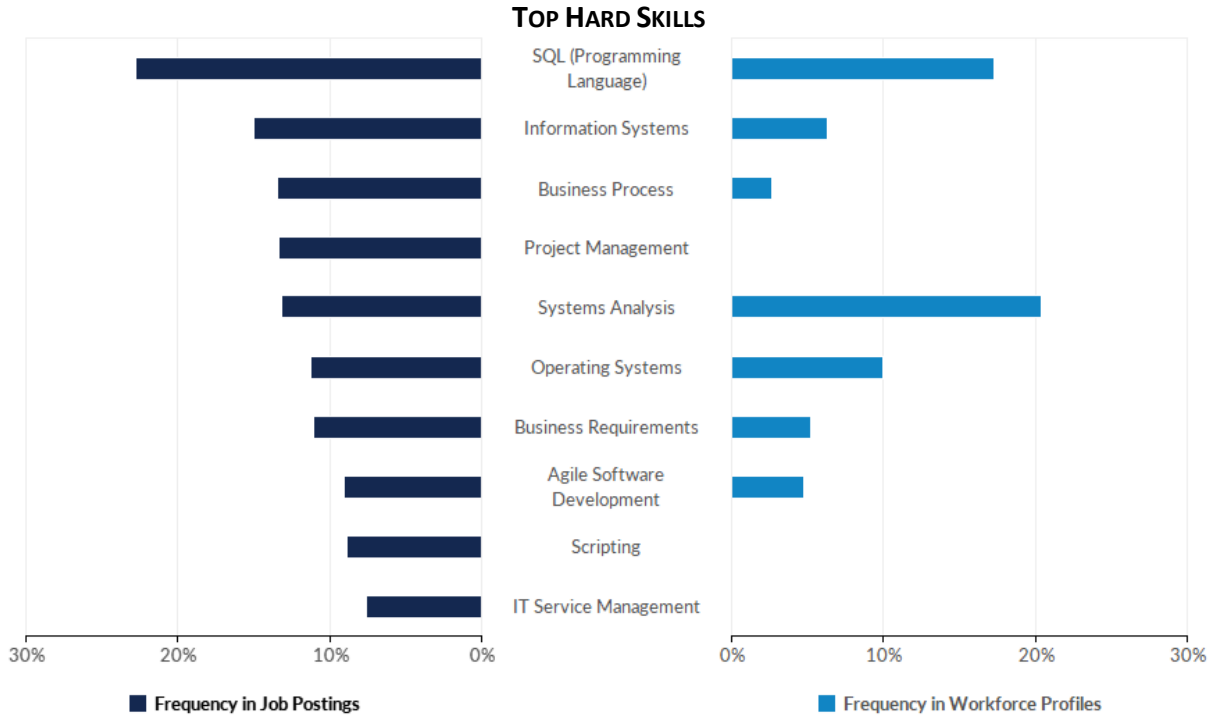


Occupation	Avg Monthly Postings (Mar 2018 - Mar 2019)	Avg Monthly Hires (Mar 2018 - Mar 2019)
Computer and Information Analysts	275	88

DATA APPENDIX 3 – COMPUTER & INFORMATION ANALYSTS JOB POSTING DATA & ANALYTICS (CONTINUED)

IN-DEMAND SKILLS

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DATA APPENDIX 3 – COMPUTER & INFORMATION ANALYSTS JOB POSTING DATA & ANALYTICS (CONTINUED)

TOP QUALIFICATIONS

Qualification	Postings with Qualification
Certified Information Systems Security Professional	134
Certified Information Security Manager	69
Global Information Assurance Certification	49
Certified Information System Auditor (CISA)	48
CompTIA Security+	37
GIAC Security Essentials Certification	29
Certified Ethical Hacker	28
Cisco Certified Network Associate	21
NIST Cybersecurity Framework (CSF)	16
Cisco Certified Network Professional	13

WHAT IS EMSI DATA?

Emsi data is a hybrid dataset derived from official government sources such as the US Census Bureau, Bureau of Economic Analysis, and Bureau of Labor Statistics. Leveraging the unique strengths of each source, the Emsi data modeling team creates an authoritative dataset that captures more than 99% of all workers in the United States. This core offering is then enriched with data from online social profiles, resumes, and job postings to give a complete view of the workforce.

Emsi data is frequently cited in major publications such as The Atlantic, Forbes, Harvard Business Review, The New York Times, The Wall Street Journal, and USA Today.