

Skillsets for Success: Careers in Big Data

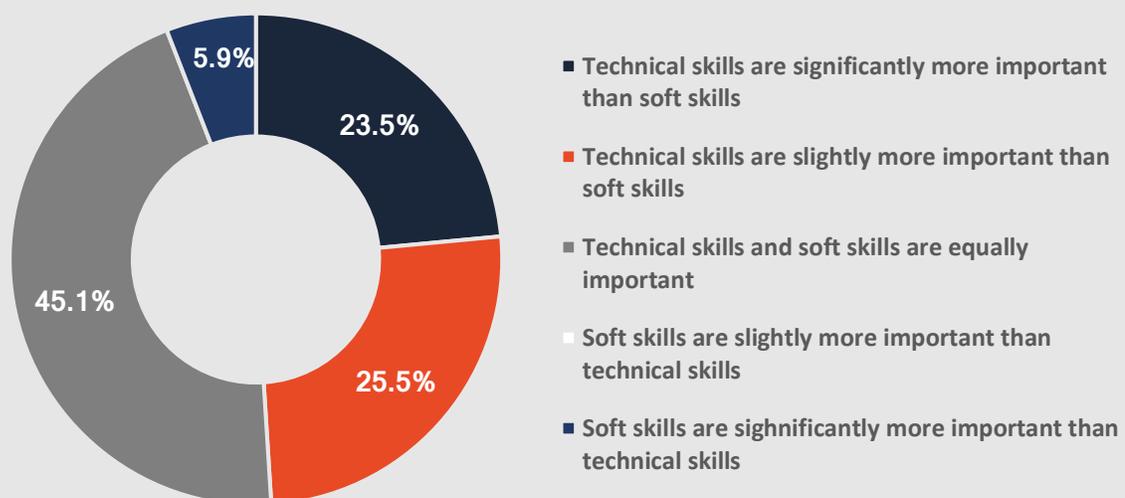
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In recent years, “big data” has exploded into the public consciousness. Businesses in virtually every industry today sit atop troves of data and are increasingly turning to data science professionals to extract their value and create insights. The Bureau of Labor Statistics projected that computer and information technology-related occupations will grow by 13% from 2016 to 2026, with demand skyrocketing for professionals in cloud computing, information security, and data science roles¹.

The Business Intelligence Group (BIG) developed evaluation metrics to rank topics based on criteria including topic popularity, potential of industry growth, and relevance to the iSchool. A clear winner emerged in Big Data, earning 100 of 110 possible points. With so many students in the Library Science and Information Management programs alike interested in the future employment promise of data science, the Business Intelligence Group decided to investigate iSchool student preparedness in the field based on the insights of program alumni, career services personnel, hiring managers, and other working professionals.

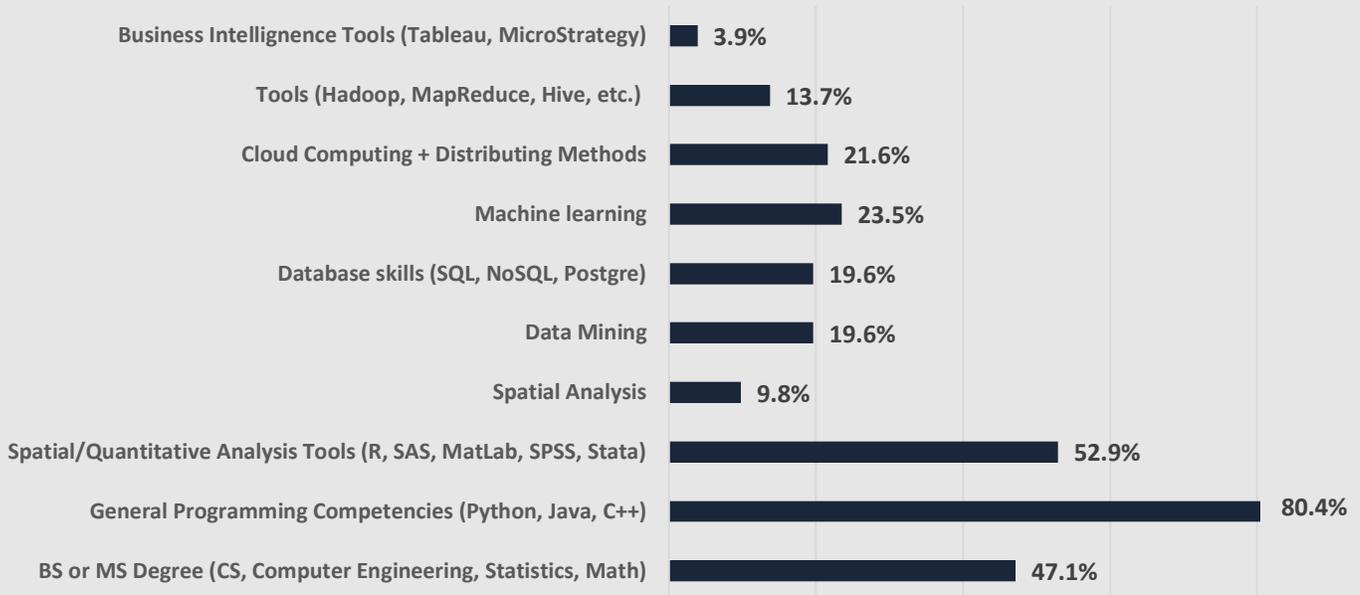
To gauge student perceptions of the skills needed for success as a data scientist, BIG conducted an informal survey for students in the iSchool and the Gies College of Business. The students surveyed overwhelmingly selected general programming competencies, proficiency in various statistical analysis tools, and holding an advanced degree in a quantitative field as the top skills needed to be a successful job candidate. Regardless of academic background, students believed that technical skills were the most advantageous. MSIM student Swathi Namburi agreed, adding that “it’s easier for students who [come] from core technical backgrounds to get a job”. Nearly half of our poll respondents believed that “hard skills” were, to some degree, more important than soft skills, while the other half contested that these skills were equally important. We then asked students to select up to three of the top technical skills and up to three of the top soft skills they believed to be the most essential for a successful job applicant:

Student Survey Results: Technical Skills vs. Soft Skills



¹ Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Handbook*, Computers and Information Technology

Top Technical Skills by Students



Top Soft Skills by Students



So how did the students' perceptions stack up? With the help of our enlisted experts, we have compiled some of the key trends and insights for aspiring data science professionals.

1 Technical Skills Reign Supremes

By and large, employers, advisors, and working professionals value a solid foundation of technical skills. Nihar Parikh, a Managing Director at IQ Workforce, noted that it is essential for students to “demonstrate strong proficiency in statistical techniques such as regression, numerical analysis, and core machine learning methods” in order to meet the baseline requirements for most positions. Similarly, the Associate Director for Assessment and Research at the University of Illinois Career Center, Dr. Julia Panke Makela, cited programming skills and an advanced knowledge of statistics as foundational for industry success. However, technical skills are just one component of the well-rounded applicant.

2 Don't Underestimate the Soft Skills!

While technical competencies are considered to be the baseline requirement, they are not *quite* the be-all and end-all. The verbiage of many job postings does not always reflect this, but employers and professionals recognize that in practice, the more intangible qualities—effective communication, critical thinking, persuasion, and interpersonal skills—are what truly elevate an employee from average to exceptional. According to UIUC alum Justin Rivera, the Manager of Data & Analytics at GE Transportation, “there are still many people who do not yet have an understanding of data science in the business world, so being able to translate technical solutions to internal stakeholders and customers who are not technical is a key skill”.

3 Know Your Value Proposition

The University of Illinois School of Information Sciences is equipping the next generation of information professionals with the requisite hard *and* soft skills to revolutionize the workforce. iSchool students are encouraged to take a variety of courses, ranging from data mining to information organization to project management. Outside of the classroom, experiential learning in the form of internships, or even just “looking for opportunities to work with real datasets on real-world problems” is incredibly valuable, according to Dr. Makela. These experiences make for a well-rounded candidate, and contribute to the student's own value proposition, or the unique skills and trait *you* bring to the table. Additionally, according to Dr. Makela, “there are many places to find a home in [the data analytics] field”, so students may maximize their chances to find their niche by outlining what makes them truly unique.