

# Exploring Perspectives on Data Science Competency: Insights from Students, Professionals, and Employers<sup>1</sup>

Kayla O’Leary<sup>a</sup>, Jeonghyun Kim<sup>b</sup>, Abebe Rorissa<sup>c</sup>

<sup>a</sup> Randolph-Macon College, Ashland, Virginia, USA

<sup>b</sup> University of North Texas, Denton, Texas, USA

<sup>c</sup> University of Tennessee, Knoxville, Tennessee, USA

kaylaoleary@rmc.edu, Jeonghyun.Kim@unt.edu, arorissa@utk.edu

## ABSTRACT

Graduate-level data science programs at iSchools have increased in recent years in response to growing needs in the field and demand for professionals with data-related skills due to advancements in technology and the ubiquity of information and data. However, a perception gap still exists regarding skills taught in classrooms and those needed in the workplace. Hence, we systematically analyzed graduate-level data science programs and courses and conducted a survey of relevant stakeholders (current students, data professionals, and employers) on their perceptions of the skills and knowledge necessary for an effective data science professional or data librarian.

In the questionnaire, 116 participants rated the importance of data science competencies and topics using a seven-point Likert scale. The survey participants rated most data competency areas as important, very important, or extremely important, indicating a strong consensus among respondents regarding the significance of technical skills like data analysis, foundational skills such as problem-solving, and soft skills like communication. Overall, students rated the importance of most technical skills higher than employers and professionals did. However, employers rated the importance of soft skills, such as communication, higher than students. A Kruskal-Wallis H test confirmed significant differences in the rating of multiple data competency importance among the three groups. When asked about the importance of data topics, participants rated topics like data ethics, privacy, and access as important. These findings could inform and assist administrators and faculty at LIS and iSchools with curricula design for graduate programs while working to prepare students for careers in the information professions.

## ALISE RESEARCH TAXONOMY TOPICS

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Curriculum; Students; Standards; Education programs/schools.

#### **AUTHOR KEYWORDS**

Data Science; Graduate-Level Education; Questionnaire, Focus Group.

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