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Improving Computational and Data Science Education and Workplace Readiness via Machine Learning AMIR SHAHMORADI, University of Texas — The field of Data Science has grown substantially over the past few years with a 663% increase in the number of data-scientist job postings during 2013-2018. The demand for college graduates who are trained in data science skills spans every field of natural sciences and engineering, necessitating undergraduate and graduate programs to adapt their curricula with these dynamic needs. However, the data-scientist job title is relatively new and its competencies are not well-defined. Here I will describe our current efforts at the University of Texas at Arlington to determine what these data-science technical and soft skill competencies are by analyzing data from national job postings. We systematically investigate the pattern of required skills by co-occurrence, the domain of science knowledge, and the characteristics of jobs and employers. This knowledge can help identify gaps between academic preparation and the skills employers seek by identifying data science competencies employers are requesting within and between domains of science, and then evaluating how well these skills align with the science curriculum in our academic programs. Such analysis over a long period will also enable the prediction of the future of job markets supply versus demand for data science skills.

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