

A machine-learning based model to identify PhD-level skills in job ads

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PhD education has attracted scholarly attention in recent years because many academics think it is necessary to transform PhD training to better prepare students for a wider range of career paths. Initiatives such as add-on courses which provide merely a list of umbrella terms of skills in PhD education are insufficient, as contextualized interpretation of skill terms are not accessible to students. Other approaches such as entrepreneurship during PhD candidature is beneficial, but the learning outcomes would not be optimized if students have no criteria against which they could assess their performance. We need a way to investigate the contextual meanings of skill terms across different professional. In PhD education literature, it is also widely assumed that the same skill terms are interpreted differently across disciplines. Nonetheless, there is a dearth of research which empirically examines such assumption. In this study, a machine learning approach was adopted to extract skills and traits listed in job ads suitable for PhD graduates. The results revealed that contextual difference exists regarding the skill requirement between industry domains. Machine learning has great potential for enabling better decision making in PhD education.