Title: New Directions in I-O Psychology: Applying Deep Neural Networks to Improve Text Measurement and Creativity

Abstract:
I-O psychology strives to address organizationally relevant issues such as improving construct measurement and better understanding workplace processes, through the scientific method. Complementary to these goals are the benefits provided by machine learning methods, which optimize prediction accuracy, scale to large datasets, and can discover common patterns within data to generate new examples. Deep neural networks are especially suited for obtaining these benefits on unstructured data, such as text, which is prevalent in applied contexts. This talk will explore directions that I-O psychologists can use deep neural network-based natural language processing within their research, including: improving measurement, advancing theory, and facilitating creativity within research workflows. The promises offered through these new directions will be appropriately tempered with discussions about the practical challenges and limitations of implementing these methods.

Bio: Dr. Ivan Hernandez is an Assistant Professor at Virginia Tech, in the Department of Psychology. His research focuses on applying computational and statistical modeling to organizational issues to improve measurement and create new tools for researchers. His work emphasizes methodologies such as agent-based modeling, deep neural networks, and natural language processing. His collaborations with the Department of Defense has led to novel test and evaluation guidelines of cognitive agents, and improved selection systems for job candidates. Currently, Dr. Hernandez serves on the Editorial Board an Organizational Research Methods, and as a Consortium Research Fellow for the Predictive Analytics & Modeling Unit of the Army Research Institute.