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THE DEPARTMENT OF COMPUTER SCIENCE PRESENTS

INVITED SPEAKER SERIES

Rogerio Schmidt Feris
IBM Research

11 March 2022 at Noon
Zoom Link: https://binghamton.zoom.us/j/91369718963

Computational Visual Pathways for Multi-Task Learning and Simulation

Abstract:

In this talk, I will describe approaches that learn data-dependent computational pathways for visual recognition. First, in the context of multi-task learning, I will show a method that learns separate computational pathways for different tasks within a unified deep neural network model, effectively deciding which features should be shared across tasks, and which features should be task-specific, in order to prevent negative interference. Then, I will show how this approach can be extended to optimize for synthetic training data generation. Specifically, I will describe a method that takes as input a task representation and decides which simulation parameters (pose, lighting, blur, materials, etc.) should be used to render a pre-training dataset that is useful for the input task. Finally, I will conclude the talk discussing other ongoing work on pre-training and transfer from synthetic data.

Bio:

Rogerio Schmidt Feris is a principal scientist and manager at the MIT-IBM Watson AI lab. He joined IBM in 2006 after receiving a Ph.D. from the University of California, Santa Barbara. He has also worked as an Affiliate Associate Professor at the University of Washington and as an Adjunct Associate Professor at Columbia University. He has authored over 150 technical papers and has over 40 issued patents in the areas of computer vision, multimedia, and machine learning. Rogerio's work has been covered by the New York Times, ABC News, and CBS 60 minutes, among other media outlets. He is an Associate Editor of TPAMI, has served as a Program Chair of WACV 2017, and frequently serves as an Area Chair of top premiere computer vision and machine learning conferences, such as NeurIPS, CVPR, ICLR, ICML, ECCV, and ICCV.