



USC Viterbi School of Engineering

Seminar

Ming Hsieh Department of Electrical and Computer Engineering



Robust and Data-Scarce Statistical Learning for Improved Neuroimaging

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2:00pm – 3:00pm

EEB 132

<https://usc.zoom.us/j/91606117125?pwd=zLMkLtb4EjnEvGA1u5O6sxlwnEjaoq.1>

Abstract: Improvements in medical imaging, image-reconstruction, and image-quality-enhancement continue to push towards enabling higher resolution in space and/or time, e.g., in dynamic MRI, and towards lower radiation dose, e.g., in PET and CT. While learning-based approaches hold great potential in pushing the state of the art, they are limited by the unavailability of large (high-quality) datasets for supervised training. This talk describes our recent methods for image reconstruction and quality enhancement that can learn from limited data, model uncertainty estimates associated with their outputs, and exhibit robustness to out-of-distribution data. We design these methods to leverage statistical modeling paradigms using traditional machine learning as well as deep learning.

Bio: Suyash P. Awate is the Asha and Keshav Bhide Chair Professor in the Department of Computer Science and Engineering at the Indian Institute of Technology (IIT) Bombay. His research focuses on quantitative methods and applications in medical image computing, leveraging principles in statistical inference and machine learning. He has around 100 full-length publications in well-known conferences and journals, receiving many best-paper awards/nominations and honors. He was a Program Chair of IEEE ISBI 2022, and serves as an Associate Editor of Medical Image Analysis. More information available at <https://www.cse.iitb.ac.in/~suyash/>

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