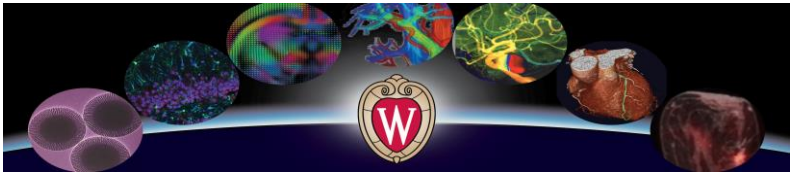

FRIDAY
October 18, 2019
4 PM
1345 HSLC

Machine Learning for Medical Imaging (ML4MI) Initiative Seminar Series

Sebastian Raschka, PhD

Assistant Professor
Statistics
University of Wisconsin - Madison

Predicting and Hiding Personal Information From Face Images Using Deep Learning

Abstract: In the modern digital age, researchers have developed a vast array of genuinely fascinating techniques that can enhance our everyday life. However, as more and more data is collected and extracted, the protection and respect for users' privacy have become a big concern. In the first portion of this talk, I will demonstrate methods for extracting soft-biometric attributes from facial images -- soft-biometric characteristics include a person's age, gender, race, and health status. In particular, as a case study, I will present a new method for predicting age reliably from face images using a convolutional neural network architecture designed for ordinal regression.

The second portion of this talk will then focus on a series of convolutional neural network architectures designed to conceal soft-biometric information. To respect and enhance the privacy of users, data sharing, and the risk for unsolicited use of private information should be minimized. However, many useful security-related applications rely on face recognition technology for user verification and authentication. Hence, the approaches being presented focus on a dual objective: concealing personal information that can be obtained from face images while preserving the utility of these images for face matching.

College of Engineering
Grainger Institute for Engineering
University of Wisconsin-Madison

Department of Radiology
University of Wisconsin
School of Medicine and Public Health

Department of Medical Physics
University of Wisconsin
School of Medicine and Public Health