Serena Yeung
Assistant Professor of Biomedical Data Science and, by courtesy, of Computer Science and of Electrical Engineering
Department of Biomedical Data Science

CONTACT INFORMATION

• Administrative Contact
  Julie Kline - Faculty Administrator
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Bio

BIO
Dr. Serena Yeung is an Assistant Professor of Biomedical Data Science and, by courtesy, of Computer Science and of Electrical Engineering at Stanford University.

Her research focus is on developing artificial intelligence and machine learning algorithms to enable new capabilities in biomedicine and healthcare. She has extensive expertise in deep learning and computer vision, and has developed computer vision algorithms for analyzing diverse types of visual data ranging from video capture of human behavior, to medical images and cell microscopy images.

Dr. Yeung leads the Medical AI and Computer Vision Lab at Stanford. She is affiliated with the Stanford Artificial Intelligence Laboratory, the Clinical Excellence Research Center, the Center for Artificial Intelligence in Medicine & Imaging, the Center for Human-Centered Artificial Intelligence, and Bio-X. She also serves on the NIH Advisory Committee to the Director Working Group on Artificial Intelligence.

ACADEMIC APPOINTMENTS
• Assistant Professor, Department of Biomedical Data Science
• Assistant Professor (By courtesy), Computer Science
• Assistant Professor (By courtesy), Electrical Engineering
• Member, Bio-X
• Faculty Affiliate, Institute for Human-Centered Artificial Intelligence (HAI)
• Member, Wu Tsai Human Performance Alliance
• Member, Wu Tsai Neurosciences Institute

HONORS AND AWARDS
• Harvard Technology for Equitable and Accessible Medicine Fellowship, Harvard University (2018 - 2019)

PROFESSIONAL EDUCATION
• Postdoctoral Fellow, Harvard University (2019)
• Ph.D., Stanford University (2018)
Teaching

COURSES

2022-23
• Artificial Intelligence in Healthcare: BIODS 220, BIOMEDIN 220, CS 271 (Aut)
• Configuration of the US Healthcare System and the Application of Big Data/Analytics: BIODS 210 (Spr)
• Facial Plastic and Reconstructive Surgery: OTOHNS 209 (Spr, Sum)

2021-22
• Artificial Intelligence in Healthcare: BIODS 220, BIOMEDIN 220, CS 271 (Aut)
• Configuration of the US Healthcare System and the Application of Big Data/Analytics: BIODS 210 (Spr)
• Facial Plastic and Reconstructive Surgery: OTOHNS 209 (Spr, Sum)

2020-21
• Artificial Intelligence in Healthcare: BIODS 220, BIOMEDIN 220, CS 271 (Aut)
• Stakeholder Competencies for Artificial Intelligence in Healthcare: BIODS 388, BIOMEDIN 388 (Aut)
• Workshop in Biostatistics: BIODS 260A, STATS 260A (Aut)

2019-20
• Artificial Intelligence in Healthcare: BIODS 220 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)
Rachael Kretsch, Alan Luo, Stefania Moroianu, Kevin Thomas, Jane Wu

Postdoctoral Faculty Sponsor
Anita Rau, Zeyu Wang, Maria Xenochristou

Doctoral Dissertation Advisor (AC)
Josiah Aklilu, Laura Bravo Sánchez, James Burgess, Jeffrey Gu, Mars Huang, Ali Mottaghi, Jen Weng, Orr Zohar

Master's Program Advisor
Maya Czeneszew, Isaac Gorelik, Jennifer Xu

Doctoral (Program)
Sanket Gupte, Elana Simon, Yuhui Zhang

Publications

PUBLICATIONS

• Ethical and Legal Aspects of Ambient Intelligence in Hospitals. JAMA
  Gerke, S. n., Yeung, S. n., Cohen, I. G.
  2020

• A computer vision system for deep learning-based detection of patient mobilization activities in the ICU. NPJ digital medicine
  2019; 2: 11

• Every Moment Counts: Dense Detailed Labeling of Actions in Complex Videos INTERNATIONAL JOURNAL OF COMPUTER VISION
  Yeung, S., Russakovsky, O., Jin, N., Andriluka, M., Mori, G., Li Fei-Fei
• Scaling Human-Object Interaction Recognition through Zero-Shot Learning
  Shen, L., Yeung, S., Hoffman, J., Mori, G., Li Fei-Fei, IEEE
  IEEE.2018: 1568–76

• Temporal Modular Networks for Retrieving Complex Compositional Activities in Videos
  European Conference on Computer Vision
  Liu, B., Yeung, S., Chou, E., Huang, D., Fei-Fei, L., Niebles, J.
  2018: 509–86

• 3D Point Cloud-Based Visual Prediction of ICU Mobility Care Activities
  Machine Learning in Healthcare
  Liu, B., Guo, M., Chou, E., Mehra, R., Yeung, S., Downing, N. L., Salipur, F., Jopling, J., Campbell, B., Deru, K., Beninati, W., Milstein, A., Fei-Fei, et al
  2018

• Computer Vision-based Descriptive Analytics of Seniors’ Daily Activities for Long-term Health Monitoring
  Machine Learning in Healthcare
  2018

• Dynamic Task Prioritization for Multitask Learning
  European Conference on Computer Vision
  Guo, M., Haque, A., Huang, D., Yeung, S., Fei-Fei, L.
  2018

• Neural Graph Matching Networks for Fewshot 3D Action Recognition
  European Conference on Computer Vision
  Guo, M., Chou, E., Song, S., Huang, D., Yeung, S., Fei-Fei, L.
  2018

• Bedside Computer Vision - Moving Artificial Intelligence from Driver Assistance to Patient Safety.
  The New England journal of medicine
  2018; 378 (14): 1271–73

• Tool Detection and Operative Skill Assessment in Surgical Videos Using Region-Based Convolutional Neural Networks
  Machine Learning in Healthcare
  Jin, A., Yeung, S., Jopling, J., Krause, J., Azagury, D., Milstein, A., Li Fei-Fei, IEEE
  IEEE.2018: 691–99

• Learning to Learn from Noisy Web Videos
  Yeung, S., Ramanathan, V., Russakovsky, O., Shen, L., Mori, G., Li Fei-Fei, IEEE
  IEEE.2017: 7455–63

• Towards Vision-Based Smart Hospitals: A System for Tracking and Monitoring Hand Hygiene Compliance
  Machine Learning in Healthcare
  2017

• Jointly Learning Energy Expenditures and Activities using Egocentric Multimodal Signals
  Nakamura, K., Yeung, S., Alahi, A., Li Fei-Fei, IEEE
  IEEE.2017: 6817–26

• End-to-end Learning of Action Detection from Frame Glimpses in Video
  Computer Vision and Pattern Recognition
  Yeung, S., Russakovsky, O., Mori, G., Fei-Fei, L.
  2016: 2678–87

• Towards Viewpoint Invariant 3D Human Pose Estimation
  European Conference on Computer Vision
  Haque, A., Peng, B., Luo, Z., Alahi, A., Yeung, S., Fei-Fei, L.
  2016

• Learning hierarchical invariant spatio-temporal features for action recognition with independent subspace analysis
  IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
  Le, Q. V., Zou, W. Y., Yeung, S. Y., Ng, A. Y.
  IEEE.2011