Tommy Cope

Ann Arbor, MI

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EXPERIENCE

KLA Corporation – Ann Arbor, MI

Machine Learning Engineer   *May 2022-Present*

- Built contrastive learning-based clustering model to group similar defects (27% accuracy improvement)
- Created lightweight ConvNext-based CNN for size regression and trained with custom physics-based synthetic dataset (13% precision improvement)
- Delivered C++ correlation-based defect detection algorithm highly robust to noise (10% accuracy improvement)
- Mentored intern and assisted investigation into using DDPM for style transfer for CAD and optical images
- Worked with U-M (PI: Jeff Fessler, Ph.D.) exploring score-based diffusion for super-resolution in optical images
- Designed photolithography mask with Python and led efforts to create ML dataset (adding $200k value)

KLA Corporation – Ann Arbor, MI

Machine Learning Intern   *Summer 2021*

- Performed ablation testing to maximize throughput and accuracy with pix2pix-based network, retaining full accuracy while reducing model size by 55% and inference time by 34%
- Evaluated conditional GANs for image-to-image translation to optimize for accuracy and inference time

University of Michigan – EECS Department, Ann Arbor, MI

Graduate Student Instructor: EECS 216 – Signal Processing and Systems   *July 2020-May 2021*

- Designed and proctored hands-on signal processing labs for class of over 160 students

University of Michigan – HaptiX Lab, Ann Arbor, MI

Research Assistant   *May 2019-July 2020*

- Wrote programs in to control commercial TENS and EMG and repurpose for safe experimentation
- Composed and directed an experiment to demonstrate the effects of distal attribution in sensory perception with the eventual application in prosthesis for upper limb amputees

SKILLS

Programming: Python, C/C++, Julia, MATLAB **|** PyTorch, TensorFlow/Keras **|** CUDA
Machine Learning Methods: Generative Imaging (GAN/Diffusion), CNN, Tabular (Random Forest/XGBoost)

EDUCATION

University of Michigan, Ann Arbor, MI

M. S. E. in Electrical and Computer Engineering   *December 2021*
Focus: Signal and Image Processing, Machine Learning

University of Michigan, Ann Arbor, MI

B. S. E. in Electrical Engineering   *May 2020*
Summa Cum Laude

Coursework: Machine Learning, Computer Vision, Optimization, Digital Signal Processing, Random Processes

ATHLETICS AND LEADERSHIP

United States National Swimming Team, <u>Member</u> (Colorado Springs, CO)   **2022-2023**
D.C. Trident, International Swimming League, <u>Member</u> (Washington, D. C.)   **2020-2022**
University of Michigan Men's Swimming and Diving, <u>Captain</u>, SAAC Rep (Ann Arbor, MI)   **2016-2020**

Awards: Olympic Trials Semi-Finalist, Seven-time US Nationals Finalist (2021-2023), Big Ten Medal of Honor – highest achieving athlete at UM (2020), Big Ten Postgraduate Scholarship, Academic All-American – 9th nationally (2020), Four-time All-American (2018-2020), Current UM School Record Holder (200yd Breaststroke)

References available upon request.