

Can Yaras

Ann Arbor, Michigan

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Education

University of Michigan – Ann Arbor

Ph.D., Electrical and Computer Engineering, GPA – 4.0

2021-Present

Advisors: Qing Qu, Laura Balzano

Duke University

B.S.E., Electrical and Computer Engineering, GPA – 3.99

2017-2021

Major in Mathematics, Minor in Computer Science

Summa Cum Laude

Research Interests

Deep learning, nonconvex/manifold optimization, applied ML.

Publications

Can Yaras*, Peng Wang*, Zihui Zhu, Laura Balzano, Qing Qu. Neural Collapse with Normalized Features: A Geometric Analysis over the Riemannian Manifold. *Accepted at NeurIPS '22*. [[arXiv](#)]

Peng Wang*, Huikang Liu*, **Can Yaras***, Laura Balzano, Qing Qu. Linear Convergence Analysis of Neural Collapse with Unconstrained Features. *Accepted at NeurIPS '22 OPT Workshop*.

Tuba Sarwar, **Can Yaras**, Xiang Li, Qing Qu, Pei-Cheng Ku. Miniaturizing a Chip-Scale Spectrometer Using Local Strain Engineering and Total-Variation Regularized Reconstruction. *ACS Nano Letters*.

Preprints

Can Yaras, Bohao Huang, Kyle Bradbury, Jordan M Malof. Randomized Histogram Matching: A Simple Augmentation for Unsupervised Domain Adaptation in Overhead Imagery. [[arXiv](#)]

Projects

PIXIT: Web-based image editor that uses SOTA deep style transfer, detection, and inpainting to allow users to easily remove and stylize automatically selected objects in an image.

EvoGAN: Novel evolutionary neural architecture search (NAS) algorithm for automatically designing generative adversarial networks, achieves competitive inception and FID scores with similarly sized hand-crafted GANs. [[GitHub](#)]

Plotter Machine: XY robotic plotter that draws using a turtle graphics API. [[GitHub](#)]

Work Experience

Software Development

Iris Kinetics

2020-2021

Created GUI software to set-up experiments and interact with a spotting tool for placing samples on custom sensor chips, wrote back-end functionality in Python for binding data analysis and fitting.

Algorithm Implementation

Bilkent University

2019

Wrote Python implementation of benchmarks for Iterative Hessian Sketch with Momentum, utilized AWS (IAM, EC2, S3, EMR, Lambda) and Dask for highly parallelized implementation on large datasets.

Teaching Assistant

Duke University

2018-2020

Teaching assistant in various departments (ECE, CS, Math).

Skills

Languages: Python, Mathematica, Julia, C/C++

Libraries: PyTorch, Jax, PyQT, Flask