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EDUCATION

UNIVERSITY OF MICHIGAN ANN ARBOR

PH.D. ELECTRICAL ENGINEERING

Present | Ann Arbor, Michigan

Status:

Ph.D. Candidate (Summer 2023)

Cum. GPA: [3.92 / 4.0](#)

Research Advisors:

[Laura Balzano](#), [Jeff Fessler](#)

UNIVERSITY OF MICHIGAN ANN ARBOR

M.S. ELECTRICAL ENGINEERING

Spring 2023 | Ann Arbor, Michigan

Cum. GPA: [3.92 / 4.0](#)

Concentration:

Data Processing & Machine Learning

Notable Works:

[Vision Transformers w/ Pose Estimation](#)

[Matrix Factorization Lit. Review](#)

[Metropolis-Hastings Sampling Method](#)

[Zeroth-Order Optimization Methods](#)

[Deep Learning Projects](#)

UNIVERSITY OF TEXAS ARLINGTON

B.S. ELECTRICAL ENGINEERING

B.S. MATHEMATICS

Spring 2020 | Arlington, Texas

Cum. GPA: [4.0 / 4.0](#)

Capstone Project:

[Wheelchair Dynamometer](#)

Notable Works:

[Machine Learning Algorithms](#)

[Stochastic Models & Simulations](#)

[Numerical Analysis Algorithms](#)

[Image/Video Compression](#)

[WiFi Antenna Optimization](#)

SKILLS

CERTIFICATIONS

[F.E. Electrical & Computer](#)

[SolidWorks Associate](#)

[AutoCAD Professional](#)

[CompTIA A+](#)

LANGUAGES

Traditional Languages:

English | Spanish (Native)

Programming Languages:

Julia | Python | \LaTeX | Linux CLI

INDUSTRY EXPERIENCE

OLSSON | ASSISTANT ELECTRICAL ENGINEER

Fall 2020 – Fall 2021 | Fort Worth, Texas

Designed electrical power distribution systems for data center clients and analyzed systems for short circuit analysis, arc flash mitigation, and breaker setting coordination.

RESEARCH EXPERIENCE

GRADUATE WORK | UNIVERSITY OF MICHIGAN

Fall 2021 – Present | Ann Arbor, Michigan

Research Interests:

Signal/Image Processing • Machine Learning • Optimization • Applied Math

Research Topics:

- Heteroscedastic (noisy) data in ML algorithms such as dimensionality reduction (subspaces & manifolds) and clustering (unsupervised learning)

- Magnetic Resonance Imaging (MRI) reconstruction algorithms for noisy and under sampled data for fast scanning systems

MRI MESH & SLING SEGMENTATION

UT SOUTHWESTERN MEDICAL CENTER & UT ARLINGTON | RESEARCHER

Fall 2018 – Summer 2019 | Dallas, Texas

Researched machine learning methods of identification and segmentation of meshes & slings, along with common pelvic floor features, in MR images for radiologist assistance in 3D visualization-guided surgery planning.

“Automatic Segmentation & 3D Visualization of MR Images of Pelvic Floor” at the [Modern Challenges in Imaging](#) conference located at Tufts University, Medford, Massachusetts.

UNDERGRAD RESEARCH PROGRAMS (UROP)

MATHEMATICS OF MISINFORMATION

DARTMOUTH COLLEGE | RESEARCH INTERN

Summer 2018 | Hanover, New Hampshire

Researched the mathematics of Bayesian inference methods for iceberg prediction tracking by modeling ordinary differential equations, simulated the model using Markov chain Monte Carlo sampling techniques, and predicted drag coefficients for iceberg prediction. ([Project Link](#))

MATHEMATICS OF MEDICAL IMAGING

UNIVERSITY OF TEXAS AT ARLINGTON | RESEARCH INTERN

Fall 2016 – Summer 2017 | Arlington, Texas

Researched and implemented the mathematics of computerized tomography such as Radon transform and filtered backprojection for image reconstruction of artificial phantoms. ([Project Link](#))

PUBLICATIONS

- [1] J. A. S. Cavazos, J. A. Fessler, and L. Balzano. Sample-wise heteroscedastic PCA with tail singular value regularization. In *Fourteenth International Conference on Sampling Theory and Applications*, 2023.