Vishal Chandra

vishalchandra.com | chandrav@umich.edu | (978) 304-7751 | Concord, MA

EDUCATION

MSE Electrical & Computer Engineering, University of Michigan 2024—2025

BSE Computer Engineering, University of Michigan 2021—2024
Magna Cum Laude, Minor in Mathematics

Relevant Coursework: Algorithms, Parallel Algorithms, Quantum Algorithms, DSP, AI for Science, Intro Computer Vision, Modern Computer Vision, Generative Models in Graphics, Reinforcement Learning, Estimation & Detection

Student Activites: Michigan Investment Group, Atlas Digital Consulting, The Michigan Daily, Michigan Flyers

RESEARCH WORKS

V. Chandra, and E. Fellman, "Ablating Shape and Texture in Cloth-Changing Person Re-Identification." *arXiv preprint.*

V. Chandra, "Explainable DiGCN for Decomposition of Opaque Node Ranking Functions." 2024 IEEE High Performance Extreme Computing Conference (HPEC), Boston, MA, USA, 2024

V. Chandra, A. Martinian, and P. Atlas, "Sculptable Kaleidocycles: Visualizing Variable Cell Geometry". In Proceedings of Bridges 2021: Mathematics, Art, Music, Architecture, Culture (pp. 205–210). Tessellations Publishing.

EXPERIENCE

Laboratory for Progress, Michigan Robotics *Ann Arbor, MI*
Research Assistant Nov 2022—Present

- Mapping DeepRL architectures to existing building blocks in hardware to enable to high-level synthesis for RL.
- Exploring gaussian splats for articulated object reconstruction and novel view synthesis from minimal data.

MIT Lincoln Laboratory *Lexington, MA*
Research Intern, *(clearance: interim secret)* May—Aug 2024

- Conducted literature review on various paradigms for robust unsupervised object re-identification including semantic understanding mining from VLMs, adversarial training, causal intervention, and auxiliary learning.
- Developed latent space clustering and community detection algorithms for query-free re-identification tasks.
- Contributed to two novel methods in unsupervised object re-identification and ablations of one existing work.

University of Michigan ECE Dept. *Ann Arbor, MI*
Computer Vision Teaching Assistant Sept—Dec 2023

- Led weekly section reviewing lecture topics including filtering, pyramids, 3D vision, and deep learning.
- Designed problem sets focused on algorithm implementations and held weekly office hours for student questions.

Cognex Corporation *Natick, MA*
Vision Research Intern May—Aug 2023

- Developed human-in-the-loop image annotation tool to leverage existing models for dataset generation in new ML applications. Deployed vision models in real time in a server-side setting.
- Formulated methods for 2D surface comparison for use in vision model loss function, based on rank correlation and ideas from differential geometry. Compiled work as whitepaper and presented to large R&D audiences.

SKILLS

Software	Python, C/C++, Java, Matlab
Frameworks	Torch, CUDA, scikit, qiskit
Hardware	Verilog, Modelsim, HLX, hls4ml

AWARDS & HONORS

Mathematics Dept. Commencement Speaker (2024)
Greylock Techfair Top Student (2022, 2023)
College of Engineering Dean's List (2021–2024)