Mridu Prashanth

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Education

- **Purdue University** — West Lafayette, Indiana
  Bachelor of Science in Computer Science Honors and Mathematics; GPA: 3.86 — *Aug. 2022 – Dec. 2026*
  - **Current Courses**: Operating Systems, Real Analysis, Abstract Algebra, AI. Dean's List/Semester Honors.
  - **Involvement**: President of DOSA, Research/Teaching Assistant, Hackathon/TEDx Organizer, Girls Who Code

Mentorship

- **Department of Computer Science - Purdue University** — West Lafayette, IN
  Undergraduate Teaching Assistant, commitment: 10-15 hr/week — *Aug 2023 - Present*
  - **CS 381 {Intro to the Analysis of Algorithms}**: Conduct Practice-Study-Observation sessions, office hours, create quizzes, contribute to development of homeworks/solutions used by 300 students.
  - **CS 252 {Systems Programming} & CS 240 {Programming in C}**: Testing modules & handouts in git-based environment for Spring 2025 assignments used by 120 students. Held office hours, labs, submit homework solutions, answered Ed Discussion posts, coordinate in-class quizzes. Explained pointers, memory allocation, and linked lists and binary trees, scripting languages, malloc, threads, lex, yacc, C to students using pseudocode and visual aids.
  - **CS 193 {Tools}**: Helped students navigate tools like GitHub, LaTeX, the terminal, IntelliJ, debugggers etc. Graded homeworks of roughly 25 students biweekly. Conducted PSO sessions/office hours.
- **WIE-WISP Tutoring Program - College of Science at Purdue University** — West Lafayette, IN
  Tutor — *Aug 2023 - Dec 2023*
  - **Python**: Tutored CS 177, CS 159, ENGR 161, ENGR 131/132/133. **Math/Physics:** precalc, Calc I/II/III, PHYS 172/221.
- **Girls Who Code - Purdue College Loop** — West Lafayette, IN
  Officer & Mentor — *Spring 2023 - Present*
  - **Oakland Academy Workshop**: Core presenter. Taught 30+ high school girls HTML/CSS/JS.
  - **Jefferson High School Workshop**: Developing C/C++ material for the workshop.

Experience

- **IDEAS Lab - Purdue University** — West Lafayette, IN
  Undergraduate Research Assistant, commitment: 10-15 hr/week — *June 2023 - Present*
  - **Urban Fire: Modeling and Predicting them**: Simulated urban fires and evaluated their causes and hot spot zones in Los Angeles, with potential to expand the method to other cities due to the proper documentation. Poster - Fall Conference.
  - **AI-driven Robotic Triage System**: Evaluated machine learning models (neural network and others) in PyTorch to classify the acuity of a patient's condition given vital measurements. Synthetically augmented MIMIC-IV and Yale Medical Datasets using SMOTE. Generated embeddings using Google API. Created GUI for first responders using HTML/CSS.
  - **Spring Undergraduate Research Conference Presenter**: Awarded 2nd place in College of Science. Also showcased at the Robotics and Intelligent Systems Expo (RISE 2), awaiting review from IROS 2024.
  - **AAAI 2024 Submission**: Used Jupyter, Matplotlib, t-SNE to build a visualization tool for the AffectEcho.
  - **Personal Project**: Built and evaluated a neural network in Python to predict the middle frame given left and right frames.
- **Lumiere Research Scholars Program** — Remote
  High School Researcher — *Jun 2021 - Aug 2021*
  - **Neural Style Transfer - Literature Review**: Analysed CNNs & GANs for style/content extraction in neural style transfer, performed experiments.
- **Mathematics Research Under Prof. Marcello Lucia (City University of New York)** — Remote
  High School Researcher — *Jun 2021 - Oct 2021*
  - **Rule of Signs - Literature Review**: Illustrated intuition & watertight nature of the rule of signs & its results by Prof Levin using visualizations. Wrote a Python module to apply Rule of Signs on given polynomial.

Projects

- **Bad Calculator 3000**: Converts infix expression to postfix and evaluates using stack. Used JavaScript/HTML/CSS.
- **SearchTracker**: Chrome extension (deployed) that helps save papers and google scholar profiles to aid paper review process. Also syncs to attached google sheets. Used HTML/CSS/JavaScript.
- **NutritionAI**: Calculates nutritional breakdown of food in picture uploaded by user using volume estimation machine learning model. For HackMIT hackathon. Used Python, JavaScript.
- **Pathways**: Converts external course credits to Purdue equivalents. Also recommends classes for shortest path to graduation for Computer Science. For BoilerMakeX hackathon. Used HTML/JS/CSS.
- **EventScheduler**: Syncs with outlook to schedule events. For HelloWorld 2023.
- **Finalist at ICPC AlgoQueen Hackathon**: National Level Collegiate Hackathon, 2022. Used C++.

Programming Skills

- **Languages**: C/C++, Python, Java, x86 Assembly Language, LaTeX, MarkDown, R, HTML, CSS, JavaScript
  Technologies: Google API, PyTorch, Keras, Pandas, Seaborn, Tensorflow, OpenGL, Git, Matplotlib, React