Mridu Prashanth

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Research papers, GitHub, LinkedIn, Devpost

Education

- **Purdue University** — West Lafayette, Indiana
  Bachelor of Science in Computer Science Honors and Mathematics; GPA: 3.96 — *Aug. 2022 – Dec. 2026*
  - **Current courses**: Systems Programming, Proof-based Linear Algebra, Machine Learning. Dean's List/Semester Honors.
  - **Clubs**: President of DOSA, Researcher @ Ideas Lab, HelloWorld Hackathon organizer

Mentorship

- **Department of Computer Science - Purdue University** — West Lafayette, IN
  Undergraduate Teaching Assistant — *Aug 2023 - Present*
  - **CS 240 {Programming in C}**: Testing modules & handouts in git-based environment for Fall 2024 assignments. Held office hours, labs, submit homework solutions, answered Ed Discussion posts, distribute quizzes during lecture. Explained pointers, memory allocation, and linked lists and binary trees utilizing pseudo-code and visual aids to students.
  - **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**: Tutored precalc, Calc I, II, III, PHYS 172/221.
- **Girls Who Code - Purdue College Loop** — West Lafayette, IN
  Mentor & Volunteer — *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 — *June 2023 - Present*
  - **AI-driven Robotic Model**: 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.
- **NAVTAT Solutions** — Bangalore, India
  Computer Engineering Intern — *Jun 2022 - July 2022*
  - **PLC Programming**: Chose and set up sensor to prevent unauthorized access to diesel generators. Programmed sensor-PLC interface using CODESYS software.

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, Assembly Language, Python, Java, LaTeX, MarkDown, R, C++, HTML, CSS, JavaScript (ES6+)
  Technologies: Google API, PyTorch, Keras, Pandas, Seaborn, Tensorflow, Git, Matplotlib, React