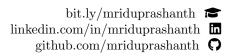
Mridu Prashanth

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EDUCATION

Purdue University

West Lafayette, IN

BS in Computer Science Honors and Mathematics, MS in Computer Science; GPA: 3.83

Aug 2022 - May 2027

- Relevant Courses: Computer Graphics, Linear Algebra, Artificial Intelligence, Machine Learning, Probability, Analysis of Algorithms, Data Structures, Programming in C, Operating Systems, Compilers, Data Communication & Networking
- o Research/Teaching Assistant, President (DOSA), Hackathon/TEDx Organizer, CS Corporate Partners Scholarship awardee, Dean's List & Semester Honors

RESEARCH

VECMA-3SV: VE Complexity Management via Stochastic Single Shot Visibility

West Lafayette, IN

Advisor: Prof. Voicu Popescu, CS XR Lab, Computer Graphics & Visualization Lab, Purdue University

May 2025 - Present

- o Compressed virtual environments (VEs) by 80%: Developed a novel aggressive visible set computation algorithm with better field of view during real-time on-device navigation compared to state-of-the-art
- \circ Indistinguishable from ground truth: Produced average errors 0.05%, SSIM scores 0.99, PSNR scores 40 dB
- o Used Visual Studio C++ Graphics Solution & OpenGL, Fast Light Tool Kit (FLTK), Python, Unity, Meta Quest 3
- o Delivered a research talk at the Purdue Summer Research Symposium

UFZs: A Novel Method to Identify Urban Fire Zones for Urban Planning

West Lafayette, IN

Advisors: Prof. Daniel Aliaga & Prof. Aniket Bera, Purdue University

Jun 2024 - Oct 2024

- Modeled urban layouts using Open Street Maps, U-Tree datasets, simulated fires on Blender, evaluated aggravating factors like wind and humidity, classified zones using clustering methods (K-Means, Graph clustering, Convex hull in Python), identifying 3 key hot spot zone types in Los Angeles & Indianapolis
- o Presented at the Purdue Fall Research Expo

AI-driven Robotic Triage Labeling & Emergency Medical Information System

West Lafayette, IN

Advisor: Prof. Aniket Bera, IDEAS Lab, Purdue University

Jan 2024 - May 2024

- Improved accuracy: Evaluated Neural Network, Multi-Layer Perceptron, Random Forest, Gaussian Naive Bayes in PyTorch for patient's acuity classification given vital measurements, classifying acuity level 1 (most critical) with 99% accuracy
- o Trained on MIMIC-IV & Yale EMD datasets: Synthetically augmented using SMOTE, Google API embeddings
- Purdue Spring Research Conference Research Talk: 2nd place in College of Science, showcased at the Robotics Expo

AffectEcho: Emotion & Affect Transfer for Speech Synthesis

West Lafayette, IN

Advisor: Prof. Aniket Bera, IDEAS Lab, Purdue University

Jun 2023 - Dec 2023

o AAAI 2024 Submission: Used Jupyter, Matplotlib, t-SNE to build a visualization tool

SKILLS

Languages: C, C++, Python, Java, Assembly, R, Bash Technologies: Linux, Git, Windows, Unity

MENTORSHIP

Undergraduate Teaching Assistant (Department of Computer Science, Purdue)

Aug 2023 - Present

Courses: Analysis of Algorithms (CS 381), Systems Programming/Programming in C (CS 252/240), Tools (CS 193)

- Led weekly labs/recitations & multiple office hours, answered public discussion posts, created and coordinated in-class quizzes, impacted ~40 students per week, graded assignments biweekly
- Explained pointers, memory allocation, scripting languages, threads, grammar & parsing (lex & yacc), data structures and designing algorithms, complexity theory (P vs NP), graph algorithms & techniques (greedy, dynamic programming, divide & conquer, etc) to students using pseudocode and visual aids
- \circ Lead developer: Designed homeworks/solutions, developed and tested test modules within a custom file generation framework in C through git, used by \sim 720 students

Tutor (WIE-WISP Program, College of Science, Purdue)

Aug 2023 - Dec 2023

• Tutored physics, calc 1, 2, 3, precalc, intro to python & C for science & engineering, reached ~60 students

Officer & Mentor (Girls Who Code, Purdue College Loop)

Jan 2023 - May 2024

- Oakland Academy Workshop: Taught 30+ high school girls HTML/CSS/JS live on Code.org, troubleshooting as needed.
- o Jefferson High School Workshop: Developed C/C++ material. Created & handled GWC LinkedIn page.

PROJECTS

- Bad Calculator 3000: Converts infix expression to postfix and evaluates using stack. Used JavaScript/HTML/CSS.
- SearchTracker: Chrome extension (deployed) to save papers and google scholar profiles, aiding paper review process
- NutritionAI: Calculates nutritional breakdown of food in picture uploaded by user using volume estimation machine learning model, for HackMIT hackathon
- Pathways: Computer Science course planner, for BoilerMakeX hackathon
- Finalist at ICPC AlgoQueen National Collegiate Hackathon (2022): Used C++ to solve ~30 programming tasks