

# Mridu Prashanth

https://mriduprashanth.github.io/	West Lafayette, Indiana, USA	+1 (765) 701-8584
Education	<b>Purdue University</b> , West Lafayette, Indiana, USA <i>Bachelor of Science in Computer Science (Honors) &amp; Mathematics</i> Specializations: Computer Graphics & Machine Learning GPA: overall 3.83/4.0, CS-only 3.84/4.0	Aug 2022 – Present Graduation: May 2026
On-Going Research	[Honors Thesis] <i>VECMA-3SV: Virtual Environment on-device Complexity Management Algorithm through Stochastic Single Shot Visibility</i> . To be submitted as a short paper to Eurographics 2026.	
Research Experience	<b>[Graphics/VR] Purdue CS XR Lab</b> with Dr. Voicu Popescu Working on <i>VECMA-3SV</i> as lead researcher and first author. <ul style="list-style-type: none"><li>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.</li><li><b>Indistinguishable from ground truth:</b> accomplished low errors 0.05%, SSIM scores 0.99, PSNR scores 40 dB (averages).</li><li>Used Unity HLSL shaders, Meta Quest 3, Visual Studio C++ Graphics Solution &amp; OpenGL, Fast Light Tool Kit (FLTK), Python.</li></ul>	May 2025 – Present
	<b>[Vision/3D Modeling] Purdue IDiF Summer Research Program</b> Worked on <i>UFZs</i> as lead researcher, advised by Dr. Daniel Aliaga & Dr. Aniket Bera. <ul style="list-style-type: none"><li>Modeled urban layouts using Open Street Maps, U-Tree datasets, simulated fires in 10+ hot spot zones on Blender, evaluating aggravating factors like wind and humidity for the task of studying urban fires.</li><li>Classified zones using clustering methods (K-Means, Graph clustering, Convex hull in Python), identifying 3 key hot spot zone types in Los Angeles &amp; Indianapolis.</li><li>Funded by the USDA NIFA PERSEUS project.</li><li>Results led to a successful funding proposal submission for NSF Fire Science Innovations through Research and Education (FIRE).</li></ul>	Summer 2024
	<b>[Machine Learning] IDEAS Lab at Purdue</b> with Dr. Aniket Bera Worked on <i>AffectEcho</i> and on <i>ARTEMIS</i> as the second author. <i>ARTEMIS</i> : addressing medical patient triaging <ul style="list-style-type: none"><li><b>Achieved improved accuracy:</b> evaluated Support Vector Machine, Multi-Layer Perceptron, Random Forest, and Gaussian Naive Bayes models in PyTorch for patient acuity classification given vital measurements, classifying acuity level 1 (most critical) with 99% accuracy.</li><li>Trained on MIMIC-IV &amp; Yale EMD datasets; addressed class imbalance by synthetically augmented using Synthetic Minority Oversampling Technique (SMOTE) &amp; Google API embeddings.</li><li><i>AffectEcho</i>: for synthetically introducing affect into speech</li><li>Demonstrated a 5.4% decrease in the Mel-Cepstral Distortion (MCD) score compared to speech generated by state-of-the-art by building a visualization tool using Jupyter, Matplotlib, t-SNE.</li></ul>	Jun 2023 – May 2024
Presentations	<i>VECMA-3SV: Virtual Environment on-device Complexity Management Algorithm through Stochastic Single Shot Visibility</i> . Purdue Summer Undergraduate Research Symposium, 2025. <i>ARTEMIS: AI-driven Robotic Triage Labeling and Emergency Medical Information System</i> . [Co-presented]. Purdue Spring Undergraduate Research Conference, 2024. Awarded 2nd place.	
Papers	R. K. Senthilkumaran, <b>M. Prashanth</b> , H. Viswanath, S. Kotha, K. Tiwari, and A. Bera. <i>ARTEMIS: AI-driven Robotic Triage Labeling and Emergency Medical Information System</i> . Submitted to IEEE-ICRA (2025). H. Viswanath, A. Bhattacharya, P. Jutras-Dubé, P. Gupta, <b>M. Prashanth</b> , Y. Khaitan, A. Bera. <i>AffectEcho: Speaker Independent and Language-Agnostic Emotion and Affect Transfer for Speech Synthesis</i> . Submitted to AAAI (2023).	
Posters	<i>UFZs: A Novel Method to Identify Urban Fire Zones for Urban Planning</i> . Purdue Fall Research Expo (2024) and IDiF (Institute for Digital Forestry) Summer Research Symposium (2024).	

Teaching Experience	<b>Department of Computer Science at Purdue</b> <i>Undergraduate Teaching Assistant</i> for CS 381: Analysis of Algorithms, CS 252: Systems Programming, CS 240: Programming in C, CS 193: Tools	Aug 2023 – Present
	<ul style="list-style-type: none"> <li>Developed course material for three semesters for <i>Programming in C</i> and <i>Systems Programming</i> by designing ~12 programming assignments in a Git-based production system while delineating data structure and feature specifications woven around a creative theme or story.</li> <li>Designed and maintained robust test cases in a custom C-based framework for each homework assignment, which was then used by ~720 students.</li> <li>Led a 4-person team and ran daily stand-ups to ensure development was on track to meeting deliverables.</li> <li>Conducted weekly labs and office hours, created quizzes, supported ~40 students weekly, and graded assignments biweekly.</li> <li>Helped students build intuition for pointers, memory allocation, threads, scripting languages, lex/yacc, algorithms, complexity, and graph theory through a mix of visual illustrations and proofs, also leading my own recitation session for a semester as a TA for CS 381: <i>Analysis of Algorithms</i>.</li> </ul>	
	<b>Girls Who Code (Purdue College Loop)</b> <i>Curriculum Officer &amp; Mentor</i> for High-School Programming & Outreach Workshops	Jan 2023 – May 2024
	<ul style="list-style-type: none"> <li>Led an introduction to web development workshop at Oakland Academy, instructing 30+ high-school girls in HTML/CSS/JavaScript by building a custom calculator app live on Code.org.</li> <li>Created C/C++ instructional materials for a workshop at Jefferson High School.</li> <li>Managed and grew the official GWC LinkedIn page.</li> </ul>	
	<b>Purdue Women in Engineering-Women in Science Program</b> <i>Tutor</i> for Physics, Calculus 1-3, Precalculus, Python, and C	Aug 2023 – Dec 2023
	<ul style="list-style-type: none"> <li>Reached ~60 students across 1-on-1 and small-group sessions.</li> </ul>	
Awards	Dean's List & Semester Honors CS Corporate Partners Scholarship for Continuing Students – \$1,500 Purdue Undergraduate Research Conference (PURC) award for 2nd place Sponsorship for travel to HackMIT hackathon ICPC AlgoQueen National Collegiate Hackathon, <i>Finalist</i>	2022 – Present 2025 2024 2023 2022
Relevant Coursework	<b>CS 588: Randomized Algorithms</b> [Grad Course] with Dr. Kent Quanrud <b>CS 334: Fundamentals Of Computer Graphics</b> with Dr. Voicu Popescu	
	<ul style="list-style-type: none"> <li>Built a 3D rendering pipeline from the fundamentals (vectors, matrices, rasterization) in a C++/OpenGL graphics solution. Implemented light reflections, shadows, textures, ray tracing.</li> </ul>	
	Other: Linear Algebra, Artificial Intelligence, Machine Learning, Probability, Analysis of Algorithms, Data Structures, Programming in C, Systems Programming, Operating Systems	
Projects	<i>SearchTracker</i> : Chrome extension helping manage research papers and Google Scholar profiles. <i>Pathways</i> : Purdue CS course-planning tool; built at BoilerMakeX hackathon 2023. <i>NutritionAI</i> : Volumetric estimation based nutrition calculator given food images; built at HackMIT 2023. <i>Bad Calculator 3000</i> : Converts infix notation to postfix and evaluates it using a stack; built with JavaScript/HTML/CSS.	2023 2023 2023 2022
Community Involvement	Purdue CS TA Reading Group, reading <i>What The Best College Teachers Do</i> InnovateHer Hackathon, <i>Volunteer</i> Dosa Outreach Student Association (DOSA), <i>Founder &amp; President</i> TEDxPurdueU, <i>Chair/Member of the Design Committee</i> Hello World Hackathon, <i>Organizer in the Design Committee</i>	Jan 2025 – May 2025 2025 Oct 2022 – Oct 2025 Aug 2022 – Feb 2024 Aug 2022 – Aug 2023
References	<b>Dr. Voicu Popescu</b> Associate Professor of Computer Science at Purdue University, <b>Email:</b> popescu@purdue.edu.	
	<b>Dr. Daniel G. Aliaga</b> Associate Professor of Computer Science at Purdue University, <b>Email:</b> aliaga@purdue.edu.	
	<b>Dr. Jeffrey A. Turkstra</b> Associate Teaching Professor of Computer Science at Purdue University, <b>Email:</b> jeff@cs.purdue.edu.	
	<b>Dr. Christopher K. May</b> Assistant Teaching Professor at Purdue University, <b>Email:</b> may5@purdue.edu.	