

ADITYA KUMAR

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[GitHub](#) ◊ [LinkedIn](#) ◊ [Personal Website](#)

EDUCATION

Ph.D. in Computer Science , Purdue University	May 2025 - Present
<i>Advisor: Dr. Bedrich Benes</i>	
Master of Science, Computer Science , The University of Arizona	May 2024 - May 2025
<i>Cumulative GPA: 4.0/4.0</i>	
Bachelor of Science, Computer Science , The University of Arizona	Aug 2020 - May 2024
Minor in Statistics and Data Science	
<i>Cumulative GPA: 3.976/4.0</i>	
<i>Summa Cum Laude, 4x Highest Academic Distinction for the Academic Year, Global Wildcat Scholar</i>	

RESEARCH EXPERIENCE

Graduate Researcher Department of Computer Science, Purdue University	Aug 2025 - Present <i>West Lafayette, IN</i>
<ul style="list-style-type: none">Joined the lab in August 2025 as a first-year PhD student.Currently working with Dr Bedrich Benes to improve both semantic and instance segmentation of point clouds.	
Graduate Research Assistant Department of Computer Science, University of Arizona	May 2024 - May 2025 <i>Tucson, AZ</i>
<ul style="list-style-type: none">Collaborated with Dr Joshua Levine to develop deep learning-based volume visualization techniques to enable compressive, interactive, and intuitive analysis.Worked on finding alternatives to SIREN-based neural networks for the purpose of compression.	
Undergraduate Research Assistant Department of Computer Science, University of Arizona	Oct 2023 - May 2024 <i>Tucson, AZ</i>
<ul style="list-style-type: none">Worked with Dr Christian Collberg on Tigress, a code obfuscator for C language that protects against static and dynamic reverse engineering.Optimized and advanced a Python based data analysis pipeline for tool validation.	
Student Software Developer and Researcher Pauli Lab, College of Plant Sciences, University of Arizona	Apr 2023 - May 2024 <i>Tucson, AZ</i>
<ul style="list-style-type: none">Collaborated with leading scientists to develop high-throughput phenotyping pipelines for data recorded by the world's largest plant phenotyping robot and drones.Created an interactive visualization dashboard using Streamlit and Python libraries, visualizing 3 years of lab data with Plotly and Open3D.	

TEACHING EXPERIENCE

Graduate Teaching Assistant Department of Computer Science, Purdue University	Aug 2025 - Present <i>West Lafayette, IN</i>
<ul style="list-style-type: none">Conducted weekly office hours and lab sessions for courses including CS 439 (Introduction to Data Visualization) and CS 252 (Systems Programming).Assisted in grading and preparing programming assignments, exams, and quizzes, ensuring a high standard of academic integrity and support.	

- Conducted weekly office hours and supplemental instruction sessions for courses including CSC 101 (Introduction to Programming), CSC 144 (Discrete Math), CSC 210 (Software Development), and CSC 352 (Systems Programming and UNIX).
- Assisted in grading and preparing programming assignments and exams for over 150 students, ensuring a high standard of academic integrity and support.

PROJECTS

C-Code Deobfuscator and Decompiler: Implemented a CNN model to classify obfuscation techniques applied to binary code, trained on a large dataset of randomly generated C programs with various obfuscations. Utilized Claude Opus' advanced language processing capabilities to decompile obfuscated programs using their classification information. [GitHub](#)

Interactive Transfer Function Editor: Developed an interactive D3.js-based transfer function editor for volume visualization, enabling real-time manipulation of color and opacity mappings for scalar volumetric datasets (e.g., VTK .vti files). Integrated seamlessly with a vtk.js volume renderer to support smooth interpolation and exploratory analysis.

Wordle 2.0: Collaborated with an AGILE team of 4 developers to create a multi-modal, multiplayer version of Wordle using Java's Swing Library. Developed an online leaderboard using MongoDB Atlas and Maven. [Demonstration Video](#)

SERVICES

- Presented a session on Data Visualization in the *Scientific Computing & Data Analytics: A Comprehensive Toolkit for Research* webinar conducted by AG2PI, attended by over 100 participants. [Webinar](#)

TECHNICAL SKILLS

Languages	Python, Java, C, SQL, MATLAB, HTML, CSS, JavaScript, R
Frameworks & Libraries	NumPy, Pandas, PyTorch, Streamlit, Open3D, OpenCV, Lucene
Technologies	Docker, High Performance Computing, REST, YAML, Git, Maven, AWS, Unity