

David Parra

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Education

PhD	University of Wisconsin-Madison , Computer Science	2022 - 2028 (Expected)
• Research Area: Computational Imaging and Computer Vision		
BS	University of Arizona , Computer Science and Mathematics	2017 - 2022
• Honors: magna cum laude		

Research Experience

Graduate Research Assistant Computational Optics Group, UW-Madison	Aug 2023 - Present PI: Andreas Velten
• Developing new imaging methods that combine new sensor designs (SPAD cameras) with computational algorithms.	
Graduate Research Assistant WISIONLab, UW-Madison	Aug 2022 - May 2023 PI: Mohit Gupta
• Optimized the computational efficiency of denoising algorithms for single-photon 3D imaging.	
Undergraduate Research Assistant Department of Biomedical Engineering, University of Arizona	May 2021 - Dec 2021 PI: Ali Bilgin
• Developed and trained vision transformer models for the super-resolution of X-ray scans.	

Publications

<i>Hardware-aware Coding Function Design for Compressive Single-photon 3D Cameras</i>	2025
David Parra , Felipe Gutierrez-Barragan, Trevor Seets, Andreas Velten	
IEEE Transactions on Pattern Analysis and Machine Intelligence (ICCP)	
<i>Sinogram Transformers: Accelerating Radial MRI using Vision Transformers</i>	2022
David Parra , Phillips Martin, Ali Bilgin	
Annual Meeting of the International Society for Magnetic Resonance in Medicine	

Posters and Presentations

<i>Hardware-aware Coding Function Design for Compressive Single-photon 3D Cameras</i>	
ICCP (Oral)	July 2025
CVPR CCD (Poster)	June 2025
<i>Lexical and Discourse Associated with Disfluency in Bilingual Parent-Child Interactions</i>	
ASHA (Poster)	Nov 2023

Teaching Experience

Graduate Teaching Assistant Department of Computer Science, UW-Madison	Aug 2023 - Present
• Courses: Introduction to Data Science	
• Aiding in students' learning by directing labs, conducting office hours, answering student questions, and writing exam questions.	

Undergraduate Teaching Assistant

Department of Computer Science, University of Arizona

Jan 2021 - Dec 2021

- **Courses:** Algorithms, Computer Architecture
- Conducted office hours to answer student inquiries and graded weekly assignments.

Supplemental Instructional Leader

Department of Mathematics, University of Arizona

Aug 2019 - Dec 2020

- **Courses:** College Algebra
- Facilitated review sessions to help students develop their course understanding and improve their studying skills.

Awards and Activities

University of Wisconsin-Madison

College of Letters Science Community of Graduate Research Scholars

Aug 2022 - Present

LEAP Alliance Fellow

Aug 2022 - Present

Advanced Opportunity Fellowship

Aug 2022 - Aug 2023

University of Arizona

REU Research Training Group in Data-Driven Discovery

May 2021 - Aug 2021

Boy Scouts of America, Eagle Scout

April 2011 - April 2017

Technologies

Languages: Python, MATLAB, C, Java, HTML, CSS, PHP, JavaScript**Packages and Frameworks:** Numpy, Scipy, CVXPY, Pytorch