

# David Parra

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## Education

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

## Publications

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<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	

## Research Experience

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<b>Graduate Research Assistant</b>	Aug 2023 - Present
Computational Optics Group, UW-Madison	PI: Andreas Velten
• Researching methods to improve single-photon 3D imaging in low-cost, resource-limited applications.	
<b>Graduate Research Assistant</b>	Aug 2022 - May 2023
WISIONLab, UW-Madison	PI: Mohit Gupta
• Optimized the computational efficiency of denoising algorithms for single-photon 3D images	
<b>Undergraduate Research Assistant</b>	May 2021 - Dec 2021
Department of Biomedical Engineering, University of Arizona	PI: Ali Bilgin Gupta
• Trained supervised transformer vision models for the reconstruction of sinogram scans	

## Posters and Presentations

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

## Teaching Experience

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<b>Graduate Teaching Assistant</b>	Aug 2023 - Present
Department of Computer Science, UW-Madison	
• <b>Courses:</b> 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.

**Undergraduate Teaching Assistant**

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**

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**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**

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