

# Matthew Dutson

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## Education

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### University of Wisconsin-Madison

MS/PhD in Computer Science

- Interests: Computer vision, graphics, machine learning

Madison, Wisconsin

Fall 2018 - Present

### University of Utah

Honors Bachelor of Science in Physics

- Magnum cum laude
- Minors: Computer science, mathematics
- Thesis: Reconstruction of Cosmic Ray Geometry Using Cherenkov Backscattering

Salt Lake City, Utah

Fall 2013 - Spring 2018

## Coursework and Languages

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Selected coursework      Machine learning, artificial intelligence, computer graphics, algorithms, scientific computing, linear algebra, statistics, differential equations

Most experience      C++, Python, Java, Rust

Some experience      C, C#, Perl, JavaScript, LaTeX, Linux/UNIX

## Work Experience

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### Esri

Map Exploration Software Intern

- Creating tools for high-performance visibility analysis in ArcGIS Pro.
- Leveraging machine learning for detecting objects in 3D urban scenes.

Redlands, California

Summer 2019

### UW-Madison Computer Sciences

Graduate Research Assistant

- Collaborator on Hustle, a scalable replacement for SQLite written in Rust.
- Wrote a Java application to generate synthetic images of biological fiber networks.

Madison, Wisconsin

Fall 2018 - Spring 2019

### University of Utah Physics & Astronomy

Undergraduate Research Assistant

- Conducted research on atmospheric cosmic ray detection techniques.
- Operated the Telescope Array observatory in Delta, Utah.

Salt Lake City, Utah

Spring 2016 - Summer 2018

### IM Flash Technologies

Process Software Intern

- Wrote Perl scripts to improve the efficiency of manufacturing defect sourcing.
- Improved existing software to reduce errors in process time estimation by 97 percent.

Lehi, Utah

Summer 2018

### IM Flash Technologies

Process Software Intern

- Built a C++ computer vision application for detecting equipment malfunctions.

Lehi, Utah

Summer 2017

## Teaching Experience

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### University of Utah School of Computing

Teaching Assistant

Salt Lake City, Utah

Fall 2017

- Course: CS 2100 - Discrete Mathematics
- Responsible for leading weekly discussions and creating homework solutions.

### University of Utah Physics & Astronomy

Teaching Assistant

Salt Lake City, Utah

Fall 2016 - Spring 2017

- Fall course: Physics 2010 - General Physics I
- Spring course: Physics 2020 - General Physics II
- Responsible for leading twice-weekly discussions.

### University of Utah Physics & Astronomy

Private Tutor

Salt Lake City, Utah

Summer 2015 - Spring 2016

- Courses: College Algebra I, General Physics I & II, Physics for Scientists I & II, Introduction to Quantum Mechanics and Relativity
- Tutored 2-3 students each semester.

## Volunteer Experience

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### UW-Madison Student ACM Chapter (SACM)

Event Committee Officer

Madison, Wisconsin

Spring 2019

- Responsible for planning and marketing CS student events.

### Lowell Elementary School

CS Club Leader

Madison, Wisconsin

Fall 2018

- Coached 4<sup>th</sup> and 5<sup>th</sup> graders in Scratch programming and computational thinking.
- Managed behavior and attention of a large group.

### Salt Lake Valley Science and Engineering Fair

Elementary Division Judge

Salt Lake City, Utah

Spring 2016, Spring 2017

- Evaluated projects at a regional science fair for K-12 students.
- Provided advice and mentorship throughout the evaluation process.

### University of Utah College of Science

Science Day Volunteer

Salt Lake City, Utah

Fall 2015, Fall 2016

- Offered logistical support at an annual outreach event for high school students.