Matthew Dutson

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Education

University of Wisconsin-Madison   **Madison, Wisconsin**

MS/PhD in Computer Science   Fall 2018 - Present
  – Interests: Computer vision, graphics, machine learning

University of Utah   **Salt Lake City, Utah**

Honors Bachelor of Science in Physics   Fall 2013 - Spring 2018
  – Magnum cum laude
  – Minors: Computer science, mathematics
  – Thesis: Reconstruction of Cosmic Ray Geometry Using Cherenkov Backscattering

Coursework and Technologies

Selected coursework	Machine learning, optimization, computer graphics, algorithms, scientific computing, high performance computing, linear algebra, statistics, differential equations
Most experience	Python, C++, Java, Rust, UNIX, Git, NumPy, TensorFlow
Some experience	C, C#, Perl, JavaScript, MATLAB, CUDA, PyTorch

Work Experience

UW-Madison Computer Sciences   **Madison, Wisconsin**

Graduate Research Assistant   Spring 2020 - Present
  – Advisor: Mohit Gupta
  – Developing techniques for interpreting data from single-photon visual sensors.
  – Exploring theory and applications of spiking neural networks.

Graduate Research Assistant   Fall 2018 - Spring 2019
  – Advisors: Jignesh Patel, Kevin Eliceiri
  – Collaborator on Hustle, a scalable replacement for SQLite written in Rust.
  – Wrote a Java application to generate synthetic images of biological fiber networks.

Esri   **Redlands, California**

Map Exploration Software Intern   Summer 2019
  – Created tools for high-performance visibility analysis in ArcGIS Pro.
  – Leveraged machine learning for detecting objects in 3D urban scenes.

University of Utah Physics & Astronomy   **Salt Lake City, Utah**

Undergraduate Research Assistant   Spring 2016 - Summer 2018
  – Advisor: Douglas Bergman
  – Conducted research on atmospheric cosmic ray detection techniques.
  – Operated the Telescope Array observatory in Delta, Utah.

IM Flash Technologies   **Lehi, Utah**

Process Software Intern   Summer 2017

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

Process Software Intern   Summer 2016
- Built a C++ computer vision application for detecting equipment malfunctions.

Teaching Assistantships

UW-Madison Computer Sciences	**Madison, Wisconsin**
CS 559 - Computer Graphics	Fall 2019
University of Utah School of Computing	**Salt Lake City, Utah**
CS 2100 - Discrete Mathematics	Fall 2017
University of Utah Physics & Astronomy	**Salt Lake City, Utah**
Physics 2020 - General Physics II	Spring 2017
Physics 2010 - General Physics I	Fall 2016

Other Experience

UW-Madison Student ACM Chapter (SACM)   **Madison, Wisconsin**

Event Committee Officer   Spring 2019
- Responsible for planning and marketing CS student events.

Lowell Elementary School   **Madison, Wisconsin**

CS Club Leader   Fall 2018
- Coached 4th and 5th graders in Scratch programming and computational thinking.
- Managed behavior and attention of a large group.

Salt Lake Valley Science and Engineering Fair   **Salt Lake City, Utah**

Elementary Division Judge   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   **Salt Lake City, Utah**

Science Day Volunteer   Fall 2015, Fall 2016
- Offered logistical support at an annual outreach event for high school students.

Private Tutor   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.