Matthew Dutson

mdutson.net

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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.

Teaching Assistant - CS 559 Computer Graphics   Fall 2019

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.

IM Flash Technologies   **Lehi, Utah**

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