

Alex Dutton

alxdttn@umich.edu | 810.493.2649

EDUCATION

UNIVERSITY OF MICHIGAN

BS IN COMPUTER SCIENCE

Expected Apr 2019

College of LSA

Major GPA: 3.0

BS IN ID PHYSICS

Expected Apr 2019

Conc. in Quantum Computing

College of LSA

Major GPA: 3.2

LINKS

Github: [alxdttn](#)

LinkedIn: [Alex Dutton](#)

BitBucket: [alxdttn](#)

COURSEWORK

Advanced Object-Oriented Programming

Operating Systems

Artificial Intelligence

Quantum Info. Theory & Computation

Modern Physics

Methodology of Theoretical Physics

Intermediate/Advanced Mechanics

Quantum Mechanics I/II

Solid State Physics

Calculus I/II/III/IV

Matrix Algebra

Partial Differential Equations

Differential Geometry

Japanese (2 years)

LANGUAGES

Very Familiar:

C • C++ • Python

Fairly Familiar:

Java • VimL • JavaScript • \LaTeX

Beginner:

Elm • Soar • Bash • FORTRAN •

Unity • C# • HTML

WORK EXPERIENCE

GLOTZER GROUP | RESEARCH ASSISTANT

Ann Arbor, MI | May 2016 - Apr 2017

- Implemented a novel ML algorithm for point clustering on n-dim manifolds homeomorphic to a sphere [Python]
- Extended existing visualization software to allow for custom mouse & keyboard interfaces [Python]
- Implemented custom templated containers library optimized for space efficiency for use in highly parallelized particle simulations [C++]

SOAR TECHNOLOGY | SOFTWARE ENGINEERING INTERN

Ann Arbor, MI | May 2017 - Aug 2017

- Developed and tested a real-time workload monitoring/analysis/balancing system using multiple biometric trackers [Java]
- Ran data analysis on large biometric data sets using a variety of statistical and ML techniques [Excel & Python]
- Debugged machine vision application for use on autonomous robotic vehicle [C]
- Made multiple map-based Augmented Reality demos for ODG R6 Smart Glasses [Unity & C#]

SOAR AUTOMOTIVE | SOFTWARE ENGINEERING INTERN

Child Company of Soar Technology

Ann Arbor, MI | July 2017 - Aug 2017

- Worked on an online interface that communicated the vehicle AI's current knowledge base, predictions, and reasoning in an easily human-accessible manner in real-time. [Elm & JavaScript]

PROJECTS & RESPONSIBILITIES

ESCHER HOUSE CO-OP | HEAD OF MAINTENANCE

Ann Arbor, MI | May 2016 - Jan 2018

- Addressed maintenance concerns for a house of approximately 140-150 people
- Led and managed a small team of peers to fix any issues relating the appliance failure, utility issues, and plumbing, heating and electrical problems
- Attended and presented at monthly meetings with other house officers and members to present issues and hear concerns
- Planned organized and led a \$3k renovation of 500ft² communal recreation area, including subfloor replacement, drywall replacement, and ceiling repair

COURSE PROJECTS | STUDENT

- (EECS 381) Designed and implemented a multi-thousand line aquatic warfare game/simulator to demonstrate Design Pattern usage and Extendable Code [C++]
- (EECS 492) Implemented an AI that solves Geometric Analogy Problems using Machine Vision combined with basic AI techniques [C++]
- (EECS 482) Implemented various components of Operating Systems such as:
 - A threading library built off of the ISO C's ucontext type
 - A pager that managed an applications' virtual address space
 - A threaded file server using C-style sockets to manage file read/write requests from multiple clients at once