Alex Dutton

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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: **alxdttn**
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 500ft^2 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