Lucas Frey

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EDUCATION

Oregon State University (Currently Attending) September 2016 – June 2019
Major Computer Science Applied in Artificial Intelligence **Major GPA** 3.66
Minor Mathematics **Overall GPA** 3.55

Awards

- President's List (2 terms)
- Dean's List (3 terms)
- Honor Roll (4 terms)
- Capital Manor's Foundation Scholarship (2016)

Relevant Coursework

- Analysis of Algorithms & Data Structures
- Operating Systems (Comfortable in Unix)
- Software Engineering (Methodologies and Testing)
- Graph Theory (Graduate level course)

ACADEMIC PROJECTS

- **Traveling Salesman Problem (TSP) Algorithms** built using **C++**
  - Implemented genetic and multithreaded heuristic algorithms to approximate the TSP
  - Outperformed entire class in 7 out of 7 competition test cases
  - Continued development outside of class building GUI in **Qt Creator** to display various graph algorithms
- **Aces Up Solitaire Game** built using **Java** and the **Ninja Web Framework**
  - Worked on an agile development team of 4 completing multiple 2-week sprints over the term
  - Utilized **Git** version control and a branch workflow to maintain the integrity of project files
  - Developed both mobile and desktop versions in **HTML**, **CSS**, and **JavaScript**
- **Robotics Club**
  - Lead team of 6 on yearlong projects to develop robots to compete in the FIRST Tech Challenge
  - State finalists and two-time regional champions in competitions of 30+ teams each
  - Developed autonomous systems to complete various tasks utilizing touch, light, IR and rotation sensors
  - Volunteered at local middle school teaching children how to build and program Lego NXT robots

PERSONAL PROJECTS

- **TSP Graph Reader** built using **Python**, **OpenCV, pybind11,** and **C++**
  - Computer vision program that computes the TSP path from a graph drawn on paper and from a webcam
  - **C++** code returns the result to **Python** and **OpenCV** draws the path on the screen in real-time
  - Developed **Python** wrapper in **C++** for accessing graph algorithms
- **String Trie** and **Sequence Trie** built using **C++**
  - Highly scalable structures for storing words and sequences of words
  - Developed **Python** wrapper in **C++** for accessing Trie objects and functions
- **Security Camera** built using **Python** and **OpenCV**
  - Adjustable motion sensitive camera that can highlight movement in frame and write footage to files

EXPERIENCE

- **Tutor in Computer Science** October 2017 - Present
  - Developed own curriculum to teach high school student C++ and Java programming
  - Taught concepts of pointers, stack vs heap, object orientation, algorithms and data structures
- **Prep Cook/Dishwasher at Capital Manor Retirement Community** July 2013 - Present
  - Worked in multiple team environments serving 400+ residents a day
  - Assisted management with technical problems and occasionally managed files on the company website