

# Preston Pickering

Software Engineer

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## SUMMARY

As a student of computer science, my coursework has given me the skills necessary to work on a wide variety of projects. I am a self-starter who is happy to proactively learn new skills. I haven't found my specialization within Computer Science yet, but I have had exposure to a multitude of subjects in the field. I hope to apply my passion to your software engineering problems!

## COURSEWORK

### Senior Project

- Working as part of a multidisciplinary team alongside electrical and mechanical engineers to produce a mobile 5-axis 3D printer.
- In charge of implementing IK for the printer.

### Graphics, Simulation, and Parallelism

- Experience with OpenGL and GLSL.
- Experience with linear algebra, vector math, physics simulation, and animation techniques in the context of games and simulations.
- Implemented Forward Kinematics in 3D.
- Previously worked with high-performance computing.
- Ran Monte Carlo physics simulations using CUDA.
- Performed autocorrelation of data using MPI.

### Machine Learning and AI Experience

- Implemented k-means clustering to classify landscape images.
- Wrote neural network to recognize handwritten digits.
- Implemented logistic regression to predict a diagnosis based on tumor data.
- Wrote a k-nearest neighbor program to predict income based on census data.
- Programmed traditional AI as well.

### Low Level Exposure

- Programmed an operating system with virtual memory management and multithreading.
- Programmed ATmega128 Microcontroller to translate user-entered text into Morse code using Atmel assembly.
- Designed digital logic circuit to produce VGA output, tested on FPGA.
- Worked on a team to implement "Flappy Bird" on an FPGA, using a PS/2 keyboard as input.
- Familiarity with major networking protocols.

## SKILLS

|                      |       |
|----------------------|-------|
| C++                  | ●●●●● |
| C                    | ●●●●● |
| Python               | ●●●●● |
| Rust (Self-taught)   | ●●●●● |
| Git                  | ●●●●● |
| Data Structures      | ●●●●● |
| Assembly Language    | ●●●●● |
| NodeJS               | ●●●●● |
| OpenGL/GLSL          | ●●●●● |
| Parallel Programming | ●●●●● |
| Digital Logic        | ●●●●● |
| HTML/CSS/JS          | ●●●●● |
| SQL                  | ●●●●● |
| NumPy                | ●●●●● |

## EXPERIENCES

### Education

Currently pursuing a Computer Science degree at Oregon State University. **Graduating June 2022.** Systems option, mathematics minor. 3.69 GPA.

### Work Experience

Previous work experience has given me practice with team environments since 2018, including as an IT Technician from 2019. The job has given me experience working with customers, taking on projects, and training new employees.

### Boy Scouts of America

Achieved the rank of Eagle Scout. Led meetings, scheduled and organized events. Engaged in community service. I fundraised, organized, and led a project to restore part of a local cemetery.