Carlos Miguel **Sayao**

Computer Science · Software Engineer

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Education

Portland State University — *Portland, OR*

B.S. in Computer Science with a Minor in Physics — *2014 - 2020*

GPA: 3.01

Technical Profile

Programming	Python, C/C++, Java, JavaScript, TypeScript, Bash, SQL, PostgreSQL, MIPS/x86, LaTeX
Machine Learning	Scikit-learn, Keras, Numpy, Pandas, NLTK, Matplotlib, Seaborn
Web Development	HTML, CSS, jQuery, Node, Express, Flask, Django, React, Ionic Framework, Google Cloud Platform, WordPress, Docker
Platforms and Tools	Git, Linux, Windows, Mac, Vim, VSCode, Jetbrains tools, PDB, GDB, Android Studio, Agile, Scrum, Jira

Experience

Reddit Post Scheduler ***https://github.com/carsayao/reddit-scheduler*** — *Milwaukie, OR*

Web Developer — *Dec 2021 - Present*

A webapp in **Django** to create "content" that can be cross-posted to other subreddits at specified times.
- Use **SQLite** to store User, Content, and Post data.
- Implement Django's generic views for flexibility and brevity.
- Use Reddit API to query and post.

Personal Client ***https://mwtxlawfirm.com*** — *Milwaukie, OR*

Website Developer — *Sep 2021 - Present*

A basic **WordPress** site for displaying information including services offered, an about page, a blog page, and contact page.
- Migrated website to new host.
- Updated look of the website for modern feel and mobile functionality.

Open Source Mobile City App ***https://github.com/jIdle/North-Plains-App*** — *Portland, OR*

Web Developer — *June 2020 - July 2020*

Open source **Android** and **iOS** app to mirror a client city's website.
- Designed pages using Ionic **React** Framework and **Typescript**.
- Built rudimentary API calls to fetch JSON and populate pages.

Analysis of NEAT, PSU ***https://github.com/cat-cuatro/NEATProgramming*** — *Portland, OR*

Machine Learning Researcher — *Feb 2020 - Mar 2020*

An analysis of the genetic algorithm, NeuroEvolution of Augmenting Topologies (NEAT) developed by Ken Stanley in 2002 at UT Austin.
- Explored and reported on the advantages of NEAT through ablation and comparison.
- Tested the validity of NEAT components, along with compared its performance to Q-Learning.
- Tested components in **OpenAI Gym** environments to test complex decision making.
- Found results consistent to author's claims in research paper.

Food Delivery App ***https://github.com/carsayao/food-delivery*** — *Portland, OR*

Developer — *Jan 2020 - Mar 2020*

This **Java** app was made for a class at PSU. It simulates a food delivery app, such as UberEats. My design held a list of orders in a doubly linked list. Each order held a linked list of special requests. The user could manually add or delete orders. The balanced tree was derived from a binary tree. Each restaurant was represented by a balanced tree populated with a list of drivers sorted by their proximity to the restaurant.
- Object oriented design ensures re-usability and code maintenance.
- Wrote own implementations for linked lists, doubly linked lists, binary trees, and balanced trees.
- Reads in a test file and populates data structures with contents.

Two-layer Neural Network ***https://github.com/carsayao/MNIST-mlp*** — *Portland, OR*

Machine Learning — *Oct 2019*

Implemented a two-layer neural network in **Python** and **Numpy**.
- Used MNIST dataset with 784 inputs, a hidden layer with variable units, and 10 output units.
- Observed and reported on the effect of varying hidden units, momentum value, and training examples.
- Debugged functions that involved complex mathematical functions and large numbers of inputs.

Dual-Pi DJ Visual Assistant (Pi-Visualizer), PSU *https://gitlab.com/madelyea/team-visualizer* — *Portland, OR*

Software Engineer — *Sept 2019 - Mar 2020*

Pi-Vis is part of an art installation to be featured at Burning Man. Written in **Python** for a **Debian**-based OS, the multi-threaded program makes extensive use of Socket programming and shell scripting to sync video playback between two Raspberry Pis.

- Managed branches and supervised merges through use of **Git**.
- Wrote communication protocols to be fast and consistent.
- Designed architecture to withstand harsh environments, minimize probability for failure, and provide users with easy interface and deployment.

Lonr *https://github.com/carsayao/lonr* — *Portland, OR*

Web Development/Machine Learning — *Jun 2019 - Aug 2019*

Web-chat app generates Markov models from corpora to simulate conversation with notable comedians.

- Originally written in **Node**, rebuilt frontend using **Flask**, HTML, CSS, Bootstrap for clean, simple look.
- Built backend using Flask-SocketIO to establish low latency two-way communication between client and server.

Web Development, PSU — *Portland, OR*

Student Grader — *Sept 2019 - Mar 2020*

- Courses covered **HTML5, CSS, HTTP, JavaScript (ES6), Node, Express, React**, and other various libraries, frameworks, and APIs.
- Work focused on evaluating student assignments and projects.
- Delivered constructive feedback and tips to students struggling with assignments.

DSHS of Washington — *Vancouver, WA*

Home Care Aid — *Jan 2017 - Present*

Free Geek — *Portland, OR*

Volunteer — *Sept 2011 - Present*