Patrick Soga

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EDUCATION

University of Notre Dame — Notre Dame, IN
Reilly 5-Year Dual Degree Program: B.S. Computer Science & B.A. Philosophy — May 2023
Current GPA: 3.87

RELEVANT COURSES (* = in-progress)

Abstract Algebra	Data Science	Operating Systems Principles*
Theory of Computing*	Data Structures	Probability & Statistics for Data Science

EXPERIENCE

Million Marker — Palo Alto, CA
Software Engineering Intern — February 2021 - Present

- Developing methods for using Google's Tesseract OCR model for extracting ingredients from product labels using Python, OpenCV and pytesseract.

RJ Reliance — Torrance, CA (remote)
Software Development Intern — Winter 2020/2021

- Wrote Python scripts to generate random datasets detailing job requisitions, job applications, and other data pertaining to HR according to weights assigned to parameters such as ratio of managers to workers, proportions of worker ages, etc.
- Wrote Flask REST API to interface with a MongoDB database (Atlas) to access the data.
- Helped write with 2 other interns a ReactJS app using Facebook's create-react-app for viewing sample data and manipulating proportions of the data in the MongoDB Atlas database.

Notre Dame Department of Computer Science and Engineering — Torrance, CA (remote)
REU (Research Experience for Undergraduates) Participant — Summer 2020

- Participated in NSF-funded research program for developing software for drones assigned to emergency response missions.
- Trained computer vision models using scikit-learn and OpenCV to classify weather conditions (foggy, low daylight, etc.) based on video provided by the drones.
- Wrote Python scripts to deploy the models to process video data and send assessments to a Node.js socket.io server.
- Wrote socket.io endpoints receiving weather data, and presented the data in an Angular app.

CS for Good — Notre Dame, IN
Non-profit Service Project, Team Member — Fall 2019 - Present

- Working in a team of 4 to create a database and dashboard for Guate Te Incluye, a non-profit organization helping recently deported migrants in Guatemala reintegrate into the labor force.
- Writing API endpoints in Node.JS interacting with a Firebase backend for over 1100 workers
- Helping design and integrate various frontend features using Embedded JavaScript (EJS)

PROJECTS

Predicting Congressional Party Flips with Binary Classification — Notre Dame, IN
Course Project for Data Science — Fall 2020

- Used congressional district demographic data from 1978-1998 to predict whether congressional districts would "flip" party control.
- Trained binary classification models using scikit-learn and processed/cleaned data using pandas.
- Achieved 87.4% accuracy and 93.1% F1 score using an AdaBoost model, the most performant of the models trained and hyperparameter-tuned.

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ACTIVITIES/CLUBS Linux Users Group, *Member*
CS for Good Club, *Member*
Philosophy Club, *Member* (president Fall 2020)

PROGRAMMING LANGUAGES JavaScript, Typescript, Python, C++ (coursework)

TOOLS/TECHNOLOGIES HTML/CSS, Node.JS, Express, socket.io, AngularJS, Angular, ReactJS, MongoDB, Parse Platform, Firebase, Git, Pandas, OpenCV