David Thuman

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Education

- **Cornell University** Ithaca, NY
  Bachelor of Science in Engineering Physics, Computer Science, Minor in Public Policy; GPA: 3.64 ***Aug 2019 - May 2023***
  - **Course**: Object-Oriented Programming, Data Structures and Functional Programming, Operating Systems, Embedded Systems, Introduction to Computer Networks, Natural Language Processing, Introduction to Analysis of Algorithms

Skills Summary

- **Languages**: Python, Typescript, Javascript, C, SQL, Unix scripting, HTML, CSS
- **Tools**: React JS, Next JS, Docker, NGINX, GIT, Postgres, Django, Ardunio, NLP, ML, Drupal 9, SharePoint, FileShare

Experience

- **Student Software Developer** Ithaca, NY
  Conference & Event Services, Cornell University ***May 2022 - Current***
  - **Hours**: Summer: 40 hours per week; Fall, Spring: 10 hours per week
  - **Contract Builder Tool**: Using a RESTful API to connect to the university's StarRez application database, I created a Python program to automatically create legal contracts for our clients. The program uses multiple LaTeX templates and a tree data structure to easily insert data and format sections which produces the final PDF. The program is containerized using Docker.
  - **CRUD Web App**: Using React JS, Django, and PostgreSQL, a basic CRUD web application was created to allow Event Planners to track Request For Proposals through their lifespan. The web app is containerized with Docker and served with NGINX.
  - **Development Operations**: From a completely fresh start, I built guidelines and standards for code creation, maintenance, and hosting. I have written technical guides on style conventions, environment layouts, and hosting solutions. I maintain the server that runs the tool for the department.
- **Student Academic Service Assistant** Ithaca, NY
  Cornell University ***Aug 2021 - December 2022***
  - **Hours**: 7 hours per week
  - **AEP 3200: Introductory Mathematical Physics (Spring 2022)**:
  - **AEP 4200: Intermediate Mathematical Physics (Fall 2021, 2022)**: Working around 7 hours a week, myself and other TAs worked as a team to write solutions for and grade homeworks and exams, hold office hours for students, and discuss the progression of students.

Projects

- **Natural Language Processing Models (Python, PyTorch)**: Using Python and PyTorch, I implemented 4 different NLP models. Examples of the model implemented are Named Entity Recognition (NER) with Hidden Markov, Maximum Entropy Markov, Feed Foward Neural Network, and Recurrent Neural Network. We also did Semantic Role Labeling with a Long-Short Term Memory (LSTM) encoder as well with a Bidirectional LSTM encoder with a Unidirectional LSTM with attention decoder. Finally, we did extractive summarization using a transformer BERT model we downloaded from Hugging Face. (Fall 2022)
- **Personal Website (Full-stack, NGINX)**: Build a frontend using Next JS and TailwindCSS. A PocketBase database serves as a CMS to hold content. This stack is hosted on a Linode server running NGINX to self-host the website. (Fall 202)
- **Congressional Roll-call Predictor (Python, TensorFlow)**: Using a neural network, I built a predictive model for roll-call votes in the Senate. Using Python and TensorFlow, I was able to web-scrape data from congress.gov and senate.gov, clean and process the data, and then train a neural network to predict a specific senator's roll-call vote on a given piece of legislation, using word features from the document. (Sep 2022)
- **Weekly Schedule Analysis (Python, Data Science)**: Beginning Fall 2021, I tracked my actions in 15-minute blocks. Using Python, I processed and analyzed the data, calculating how I spent my time as a Cornell University student. Classifications were Work, Life, Food, and Sleep, Further breakdowns were used to break up courses, time with friends, or general fun. Matplotlib Python library was used to visualize the breakdown of my life, semester by semester. (Dec 2021)

Leadership

- **President of The Pi Kappa Alpha Fraternity - Beta Theta Chapter at Cornell University**: Lead an Executive Board of 11 members through teamwork, leadership, and delegation. Our organization consists of over 65 members, with a budget of over 200,000 dollars. Direct the Executive Board to represent and increase our fraternity's philanthropy, community service, and social efforts.