

SRIKHAR PADMANABHAN

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EDUCATION

University of Michigan, Ann Arbor, MI

Aug 2019 – Aug 2023

- Computer Science: *Bachelors in Science, Engineering (B.S.E)*
- Economics: *Bachelor's in Science (B.S.)*
- GPA: 3.779, *Summa Cum Laude*

RELEVANT WORK EXPERIENCE

Capital One, San Francisco, CA, *Associate Software Engineer*

August 2023 - Present

- Enabled AWS Cross Regional Replication between us-west and us-east for redundancy against critical failure (in production)
- Rectified the connections from AWS SQS to the DLQ for the backend of the productivity framework.

TrueLark (Remote), Palo Alto, CA, *Part Time Developer*

May 2020 – May 2022, September 2022 – August 2023

- Helped automate customer service tasks for local businesses such as question answering, pricing, and appointment management
- Implemented a dictionary-based lookup utility to find service and staff name matches within customer communication
 - Developed a representation for each kind of match (Leading, Trailing, Exact, Middle) using N-grams and a one-hot vector
 - Integrated this labeler into production using **Tensorflow Servings** and **Flask**
 - Integration of this feature into the existing sequence labeler significantly increased precision, recall and accuracy (95%)
- Conducted experiments on this labeler such as removing various layers and compared performances of these different infrastructures in order to draft the requisite documentation to apply for a Provisional and Utility Patent.
- Wrote documentation supporting a patent application for the Simple Time Pattern Detection Detector
 - Results showed around 80% improvement over current state of the art (SUTime and Huggingface)
- Developed a zero shot FAQ detector that was generalizable through pair recognition of semantically-related QA combinations.
 - A zero shot FAQ detector was necessary to reduce computing costs/time and expedite onboarding for both new businesses and current businesses who need to update their FAQ Answers.
 - Model achieved over 95% precision and recall and has been incorporated into production
 - Conducted experiments on this FAQ Detector and comparing its performance to current state-of-the-art models
 - Wrote the documentation for the patent application
- Constructed a web crawler that was used to index data in a structured format to then be used for question answering
 - Web crawler parsed website into blocks of text and when given a query, constructed a context message constructed a context message that was prompted to OpenAI's ChatGPT to construct a response with
 - Created an automatically generated chatbot that when given a URL could answer questions based on the information provided by the URL and its hyperlinks.
 - This is currently in production for use in selected business at a trial level
- Languages: **Python, Java**; Frameworks: **Keras, Tensorflow, Scrapy**

Capital One, Plano, TX, *Technology Intern*

June 2022 – August 2022

- Worked as an intern in the Technology Intern Program at Capital One
- Captured valuable test data from Cypress tests currently not leveraged, and built a new dashboard to display this data
 - This data included stack traces, error logs, videos, and screenshots indexable by searching by testID
- Created a backend to store the data using **Express** and **S3**
- Revamped the architecture to make it serverless using AWS Lambda
- Created unit test suites for both the frontend and backend using Jest and react-testing-library
- Integrated this dashboard for use as an add-on to the current Cypress testing agent within Capital One
- Presented a demonstration of this dashboard to the Cypress team and other stakeholders inside Capital One
- Documented the software and created a standard instruction manual for Cypress users
- Currently in production and used by thousands of developers within Capital One
- Languages and Frameworks: **ReactJS, ExpressJS, Javascript, Typescript, S3, Lambda, PostgreSQL, DynamoDB, HTML**

ACADEMIC PROJECTS

Market Simulator (Strategic Reasoning Group): Machine Learning

Feb 2023 – Aug 2023

- Created a continuous double auction market simulator with a variety of agents / traders using C++
- This could later be interfaced with reinforcement learning as part of the Strategic Reasoning Group
- Implemented the overall simulator class, the scheduler class, in addition to other simulator specific data structures such as random queue and random priority queue.
- Drafted documentation for each of the files which comprised of the overall class structure and an explanation of each member variable and function.

SKILLS

Python, C++, Tensorflow, Keras, PyTorch, Algorithms, MATLAB, Java, JavaScript/Typescript, Rust, HTML, C#, Unity