SRIKHAR PADMANABHAN

srikhedu@gmail.com | +1 (502) 909 7425 | www.linkedin.com/in/srikharpadmanabhan | 1014 Vaughn St, Ann Arbor, MI 48104

EDUCATION

University of Michigan, Ann Arbor, MI Aug 2019 – December 2023 (Expected)

- *Bachelors in Science, Engineering (B.S.E)*
- Major*: Computer Science, Economics*
- GPA: 3.74
- Relevant Courses Taken: Data Structures, Algorithms, Artificial Intelligence, Computer Vision, Machine Learning, Theory of Computer Science, Computer Architecture, Discrete Math, Differential Equations, Compilers,

RELEVANT WORK EXPERIENCE

Capital One, Plano, TX, *Technology Intern* June 2022 – August 2022

- Worked as an intern in the TIP Program at Capital One, in a team with two other interns
- Captured valuable test data from Cypress tests currently not leveraged, and built a new dashboard to display this data
- Created a backend to store the data using **Express** and **S3**, as well as a dashboard to visualize this data
- Revamped the architecture to make it serverless
- Created unit test suites for both the frontend and backend
- Currently in the process of being deployed across enterprise.
- Languages and Frameworks: **ReactJS, ExpressJS, Javascipt, Typescript, S3, Lambda, PostgreSQL**

TrueLark (Remote), Palo Alto, CA, *Part Time Developer* May 2020 – May 2022, September 2022 - Present

- TrueLark is a conversational AI company that automates customer service for brick and mortar businesses, supporting many use cases such as question answering, pricing, appointment management, memberships and promotions
  - The AI utilized consequently must be able to parse multi-turn conversation data into structural data, however, standard NLP processing techniques produce structures that are too shallow in nature, and so a novel neural architecture was necessary to obtain and sustain the requisite information from these conversations
  - This architecture was developed with two unique features, a hierarchichal labelling structure, where labels from previous layers propagate to higher levels through an augmented feature vector, and a contextual-attention layer.
    - Implemented a dictionary-based lookup utility to search through a list of messages that was the first feature vector to be augmented by the future layers.
    - This approach led to higher precision and recall for labels and an overall accuracy of 95%.
- Helped integrate the labeler into production using **Tensorflow Servings** and **Flask**
- Ran experiments on the labeler such as removing various layers and compared performances of these infrastructures as part of the process of drafting requisite documentation to apply for a patent.
  - Provisional Patent has already been filed, with a Utility Patent in the future.
- Helped develop a zero shot FAQ detector that was generalizable through pair recognition of semantically-related QA combinations.
  - A zero shot FAQ detector was necessary since as businesses are added to the TrueLark system, business must be able to detect whether messages are correlated to already existing question answer pairs from a business at once.
  - This project is still ongoing, however early results show 90% precision and recall for a Transformer based model.
- Languages: **Python**; Frameworks: **Keras**, **Tensorflow**

OpsCruise, Mountain View, CA, *Front-End Software Intern* June – July 2018

- OpsCruise is an open-source platform that ensures high performance of cloud based applications.
- Created a tool to visualize geospatial data using **Sankey diagrams** and **D3.js**.
- Languages: **HTML, JavaScript**

ACADEMIC PROJECTS

Image Classification: *Machine Learning* Sept 2021

- Utilized Convolutional Neural Networks (CNNs) and machine learning principles to classify images of animals.
- Explored supervised pretraining, subset of transfer learning, to improve classification accuracy and precision.
- Applied data augmentation, rotations, and color-shifts, to enhance the training data and improve the robustness of the model
- Programming Environment: **Python, PyTorch**

Reinforcement Learning: *Artificial Intelligence* Mar – Apr 2021

- Implemented a version of reinforcement learning, Q-learning, to solve treasure hunt maps without knowledge of rules.
- Determined the policy at each state using the ideas of exploration, episodes, reward, discount and learning rate.
- Compared performances of Q-learning to other variations of reinforcement learning such as value iteration and policy iteration
- Development Environment: **Python**

SKILLS

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