BHARATH SREENIVAS

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Education

Carnegie Mellon University ·
B.S. Computer Science, May 2023
Concentration: Machine Learning, Computer Systems
Dean's List High Honors

Skills

PROGRAMMING LANGUAGES

Python
C
Java
Javascript
Angular JS
Ruby
Standard ML
HTML/CSS
LaTeX
MATLAB

TOOLS

PyTorch
TensorFlow
Pandas
ROS
Numpy
Flask
Unix Command Line
Git
AWS
Google Cloud Products

COURSEWORK

16-385: Computer Vision
15-410: Operating Systems
11-485: Introduction to Deep Learning
15-281: Artificial Intelligence
15-440: Distributed Systems
15-210: Parallel and Seq. Data Structs and Algos
15-150: Principles of Functional Programming

Employment

Meta — New York, NY
Software Engineering Intern (ML) — May 2022 to Aug. 2022

- Built news article candidate generation pipelines to incorporate user feedback (hide/see more/see less) into their future recommendations
- Performed detail user segment analysis to classify users into light, medium, or heavy buckets based on their interaction with feedback features
- Implemented a training sample demotion in the p(x-out) model based on a user's "article hide" ratio to remove bias towards heavy users
- Delivered a 3% increase in model AUC and noticed improved precision and recall for light and medium user groups via online experimentation

Amazon Web Services — Seattle, WA
Software Development Engineer Intern — June 2021 to Aug. 2021

- Designed and implemented new service in **Java, Ruby,** and **Angular JS** to support voting on comments in code review software used by all Amazon engineers
- Deployed four new REST API endpoints and designed custom DynamoDB table to persist reaction data
- Leveraged DybamoDB Global Secondary Indices to implement data replication system that converts reaction data to relational DB for optimized table joins and fast voter statistic retrieval
- Released comment workflow documentation for official customer use

Relativity, Software Engineering Intern — Chicago, IL
Structured Analytics - Email Threading Team — May 2020 to Aug. 2020

- Used data analytics concepts to to optimize email review by arranging entire email conversations in sequence and identifying inclusive documents
- Used C# and Angular JS to implement API's that improved workflows and enhance UI on production software

Carnegie Mellon Racing — Pittsburgh, PA
Driverless Car Engineer — Aug. 2020 to Aug. 2022

- Developing localization, path planning, and motion control technologies for a fully autonomous racing car competing in Formula Student Driverless Championship
- Leveraging computer vision and robotics tools in **Python** and **ROS** to develop Rapidly-Exploring-Random-Tree algorithm for vehicle path planning

NavLab Center for Autonomus Vehicle Research — Pittsburgh, PA
Research Assistant — June 2021 to Dec. 2021

- Developed sidewalk and snow detection model with Facebook Detectron to deploy on Port Authority buses for bus stop quality control
- Overlayed ground-truth location of sidewalks at bus stops with current camera image to detect if the sidewalk needs snow plowing
- Funded by National Transportation Safety Board as an accessibility project for the elderly, ensuring that bus stops are maintained in the winter

Carnegie Mellon University Robotics Institute — Pittsburgh, PA
Research Assistant, Reliable Autonomous Systems Lab — Aug. 2020 to Jan. 2021

- Developed facial recognition and landmark detection web app with **Python** and **OpenCV**, leveraging libraries such as **OpenFace**
- Used image classification/object detection to automate video analysis and detect emotion to train automated robotic tutor (code here)

Projects

Lane and Yaw Rate Detection (Code Here) — June 2021

- Building computer vision model using **OpenCV** and **Python** to perform lane detection and yaw rate reporting
- Using Hough transforms for line identification, and other search techniques to find curvature in the road
- Leveraging feature matching to identify direction of movement in relation to car heading to determine yaw

Battlecode 2021-22 (Code Here) — Jan. 2021 to Jan. 2022

- Developed an AI player in **Java** to strategically manage a robot army to defeat enemy teams
- Leveraged pathfinding and distributed algorithms to increase player competitiveness
- Implemented custom libraries and bit-packing methods to optimize bytecode usage
- Qualified for finals tournament; finished top 10 out of 250+ teams internationally

Tartanhacks 2021: Spot Your Mood! (Code Here) — Feb. 2021

- Created a Spotify extension using **Flask** that allows users to see the mood of their listening history and playlists
- Used Spotify, Google NLP, and Genius APIs to create a uniqe mood metric, combining lyric analysis with song metadata
- Developed feature for users to create an auto-generated playlist based on a specific mood they're feeling

CS and Game Theory Research, Northwestern University — Aug. 2017 to Aug. 2019

- Developed simulations in Python and MATLAB to determine optimal pricing strategies for wireless service providers
- Published "Duopoly Competition in Advertising-Sponsored Wi-Fi Provision" at W.I.T.S. Conference