# Bharath Sreenivas

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## Education

**Carnegie Mellon University** — *Pittsburgh, PA*

Bachelor of Science in Computer Science, GPA: 3.96/4.0 — *Aug 2019 to May 2023*

- Concentrations in Machine Learning, Computer Systems

## Skills

**Languages** Python, C, C++, Java, JavaScript, Angular JS, SQL, Ruby, Standard ML, HTML/CSS, LaTeX, MATLAB

**Tools** PyTorch, Tensorflow, Pandas, ROS, Numpy, Flask, Unix Command Line, Git, AWS, GCP

**Coursework** Computer Vision, Operating Systems, Distributed Systems, Computer Networks, Database Systems, Intro to Deep Learning, Parallel and Sequential Data Structures and Algorithms, Principles of Functional Programming

## Experience

**Meta** — *New York, NY*

Software Engineering Intern, News Recommendations (ML) — *May 2022 to Aug 2022*

- Engineered new dataset feature in **Python** based on user feedback (see more/see less/article hide), resulting in **10% increase in accuracy** of embeddings used in similarity-based news article candidate generation
- Implemented training sample demotion in pre-ranking logic for p(x-out) model based on user's "article hide" ratio, removing 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 Engineering Intern, Builder Tools — *May 2021 to Aug 2021*

- Designed and implemented new service in **Java** and **Ruby** to support voting on comments in code review software used by all Amazon engineers
- Leveraged **DybamoDB Global Secondary Indices** to persist reaction data and implement data replication system that converts NoSQL data to relational DB for optimized voter statistic retrieval
- Extended UI using **Angular JS** to add reactions on comments, hitting **new REST API endpoints** on button click

**Relativity** — *Chicago, IL*

Software Engineering Intern, 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*

- Developed localization and path planning technologies for an autonomous racing car competing in Formula Student Driverless Championship
- Leveraging computer vision and robotics tools in **Python** and **ROS** to **write 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 snow detection model with **Facebook Detectron**, **Python**, and **OpenCV**, for bus stop quality control on Port Authority buses
- Funded by National Transportation Safety Board as an accessibility project for the elderly, ensuring that bus stops are maintained in the winter

## Projects

**Lane and Yaw Rate Detection (Code Here)**

- 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, 2022 (Code Here)**

- Developed an AI player in **Java** using unrolled pathfinding and distributed algorithms to strategically manage a robot army to defeat enemy teams
- Implemented custom map/list libraries, communications, and bit-packing methods to optimize bytecode usage
- Qualified for finals tournament; finished top 7 out of 250+ teams internationally

**Tartanhacks 2021: Spot Your Mood! (Code Here)**

- 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 unique 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**

- 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