SHREYAS RAI

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EDUCATION

UNIVERSITY OF MASSACHUSETTS AMHERST *Amherst, MA*

Bachelor of Science in Computer Science **|** ***Departmental Honors*** *Expected Graduation: May 2024*

- **Relevant Coursework**: Data Structures, Functional Programming, Computer Systems, Discrete Math, Calculus 1-3, Linear Algebra, Algorithms, Web Programming, Introduction to Machine Learning, Search Engines, Game Theory

SKILLS

Programming languages: Python, Java, Javascript, C
Web Development: HTML/CSS, Node.js, React.js, Django
Libraries/Frameworks: OpenCV, Tesseract OCR, spaCy, Pandas, Numpy
Development Tools: Git, Docker, Android Studio, Hastus

WORK EXPERIENCE

MACHINE LEARNING CO-OP *Jun 2023 - Current*

Keolis Commuter Services **|** *Python, Pandas, Hastus* *Boston, MA*

- Developing a comprehensive predictive model for Keolis Commuter Services using past weather trends, and historical attendance data which will be used to produce crew absentee estimates and outlooks, aiding crew allocation decisions
- Gained familiarization with Hastus/EVX and used it to create specialized attributes and formulas to enhance usability of a crew dashboard, crew schedule optimizer, and predictive model training
- Leveraged and developed automated data exports with Hastus and Python to create previously unattainable yet informative data visualizations for diverse train crew data for Keolis Crew Management

SOFTWARE ENGINEERING INTERN *Jun 2021 - Sep 2021*

Drishti Technologies **|** *Python, Docker, Bash, Git, Axis Camera Application Platform (ACAP), FastAPI* *Mountain View, CA*

- Designed and developed a motion detection data pipeline for Drishti's cloud-based video analytics
- Developed and installed custom applications on Drishti's deployed manufacturing cameras
- Authored practical and powerful use cases and used the collected data to generate specialized analytics that would later augment Drishti's neural network
- Used CI/CD testing to integrate the new pipeline into Drishti's GCP-based infrastructure

PROJECTS

Email-GPT (In Progress) **|** *Python, GPT-3.5, Langchain, OpenAI API*

- Utilizing OpenAI API and GPT-3.5 to develop a custom LLM with the goal of enhancing my Gmail search efficiency
- Using Python and Langchain to create a decentralized interaction framework for Gmail
- Future plans include implementing search logic and generalizing the this project for other structured data

TIME SERIES TOOLKIT (weav.ai) **|** *Python, Pandas, Numpy, Arrow* **|** github.com/shreyasrye/timeseries

- Built a robust time series detection and generation algorithm using Pandas that can operate on any kind of data and has features and produced it as a usable API for weav.ai.
- Includes features including resampling irregular data to regular data, different aggregation functions that can be applied on any subset of columns, and the ability to downsample to any frequency.
- Developing a merge algorithm to merge and format different datasets into a specific format specified by a user
- Training a neural network to detect habitual patterns regarding the usage of the time series algorithm

NAVIGATION FOR THE BLIND (Cruzhacks 2018 Winner) **|** *OpenCV, Python, Numpy*

- Developed an algorithm that can detect and outline sidewalks and driving lanes using Python and OpenCV
- Uses the Hough Lines Probabilistic, which uses two linear lines to highlight edges
- The program gives real-time voice feedback to users who are blind