Charitarth Chugh

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EDUCATION

UCONN
MATHEMATICS-STATISTICS

Minor: Computer Science
Expected Graduation: May 2025

Relevant Coursework
Machine Learning • Data Science
Data Structures & Algorithms
Probability • Systems Programming
Applied Linear Regression

SKILLS

PROGRAMMING

Python:
NumPy• Pandas• Polars• Matplotlib
FastAPI • SQLAlchemy • Flask
Frontend:
Flutter • React

MACHINE LEARNING

Tools:
PyTorch • Transformers • scikit-learn
XGBoost • Albumentations

DEVELOPMENT

GitHub Actions• Linux • Bash •
Containers (Docker, Podman)

ACTIVITIES

UCONN AI CLUB

President: 2023-2025
• AI Club does workshops, showcases, and projects around deep learning.
• Co-ordinated and lead weekly meetings, with topics such as PyTorch, Apache Spark, CNNs

LINKS

GitHub:// charitarthchugh
LinkedIn:// charitarth
Twitter:// @charitarthchugh
Kaggle:// charitarth
Medium:// @charitarth.chugh

WORK EXPERIENCE

PROTECTION SHIELD | MLE, Freelance

September 2023 - May 2024

- Worked on their AI team to build federated learning models to detect network attacks.
- Built baseline models on publically available datasets such as NF-UQ-NIDS v2.

PROJECTS

ENERGY JUSTICE MAPPING TOOL | Data Science

July - August 2024

- The Energy Justice Mapping Tool is a solution to find areas which lack equitable access to energy infrastructure.
- Worked in a multidisciplinary team whose proposal for a $2,500 grant was selected for the Clean Energy & Sustainability Innovation Program 2024
- Responsible for the integration and real-time analysis of geospatial data from 5+ data sources using GeoPandas
- Presented to White House officials and directors of Eversource Energy at the Clean Energy Summit 2024

SPARSEINST | Computer Vision

September-December 2024

- Replicating the results of Sparse Instance Activation for Real-Time Instance Segmentation by Cheng et al. (2022), published at CVPR 2022
- Implementing SparseInst on ResNet-50 backbone
- Utilizing PyTorch Lightning, FiftyOne, WandB and Optuna for model training, testing, and evaluation.
- Assessing model performance by comparing segmentation accuracy and speed metrics, such as Average Precision and FPS, against the original results.

BOOKIE | Full Stack

May 2022-July 2022

- Created a cross-platform bookmark manager using FastAPI, SQLite & Flutter
- Led a 5-person cross-functional team integrating frontend, backend, and database
- Setup GitHub Actions for code cleanup
- Developed CLI interface, API, daemon and facilitated Python packaging
- Rewrote database for faster writes and updates, using recursive SQL database structure.

RESEARCH

UNDERGRADUATE RESEARCHER November 2022 - Present

• Developed and optimized machine learning models for embedded devices for object detection tasks under the guidance of Dr. Caiwen Ding
• Working under Dr.Derek Aguiar to create tabular models that predict motion outcomes in legal cases using TabTransfomers.

AWARDS

HACKHARVARD 2023 | Efficiency Boosters Prize

- Created SnipStudy, a product that helps students extract information from long form video content, such as video lectures, more efficiently.

HACKUMASS X | Best Use of Twilio

COINDESK X TRADEBLOCK CRYPTO HACKATHON | 1st Place