

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, and
- Utilizing PyTorch Lightning, FiftyOne, WandB and Optuna for model training, testing, and evaluation.
- Made data loading on COCO dataset 3x faster than default using caching and fast JSON parsing.

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 combine LLMs and tabular models to predict motion outcomes in legal cases.

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