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Charitarth Chugh

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EDUCATION

UCONN
M.ENG.
COMPUTER SCIENCE
2025-2027

UCONN
MATHEMATICS-STATISTICS B.S.
Minor: Computer Science
2021-2025

Relevant Coursework
Machine Learning •Deep Learning
Data Science • Data Structures
& Algorithms• Probability
Systems Programming•
Linear Regression•
Mathematical Statistics

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
• The AI Club conducts workshops, showcases, and projects focused on deep learning.
• Coordinated and led weekly meetings with topics such as PyTorch, PEFT, CNNs.

LINKS

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

WORK EXPERIENCE

PROTECTION SHIELD | MLE, Freelance
September 2023 - May 2024
- Collaborated with the AI team to build federated learning models for network attack detection.
- Developed baseline models using publicly available datasets such as NF-UQ-NIDS v2.

UCONN Research Assistant, CTI
July 2023 - December 2023
- Led system bring-up of a model autonomous vehicle platform to support research on road safety and intelligent transportation systems.
- Coordinated cross-functional efforts between the OEM and research stakeholders to ensure smooth integration, testing, and deployment.

PROJECTS

ENERGY JUSTICE MAPPING TOOL | Data Science
July - August 2024
- As a key member of a multidisciplinary team, contributed to software and methodology development, collaborating closely with stakeholders to identify areas lacking equitable energy infrastructure.
- Secured a $7,500 grant for our proposal for the Clean Energy & Sustainability Innovation Program 2024, achieving a 10% success rate among applicants.
- Integrated and analyzed geospatial data from 5+ data sources in real-time using GeoPandas.
- Presented findings to White House officials and directors of Eversource Energy at the Clean Energy Summit 2024.

SPARSEINST | Computer Vision
November 2024 - Present
- Replicated the results of Sparse Instance Activation for Real-Time Instance Segmentation by Cheng et al. (2022), published at CVPR 2022.
- Utilized PyTorch Lightning, FiftyOne, and Weights & Biases for model training, testing, and evaluation.

BOOKIE | Full Stack
May 2022-July 2022
- Created a cross-platform bookmark manager using FastAPI, SQLite & Flutter.
- Developed CLI interface, API, daemon and facilitated Python packaging
- Rewrote database for faster writes and updates, using recursive SQL database structure.

RESEARCH

RESEARCHER November 2022 - Present
- Collaborating with Dr.Derek Aguiar to integrate large language models and tabular predictors for forecasting motion outcomes in legal cases; accelerated inference by 60
- Developing parameter-efficient fine-tuning methods to train robust deep learning models with limited resources, improving adaptability and generalization across vision tasks.

AWARDS

HACKHARVARD 2023 | Efficiency Boosters Prize
HACKUMASS X | Best Use of Twilio
COINDESK X TRADEBLOCK CRYPTO HACKATHON | 1st Place