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Charitarth Chugh

contact@charitarth.dev | charitarth.dev | 475.434.6427

EDUCATION

UCONN
MATHEMATICS-STATISTICS
Minor: Computer Science
Expected Graduation: May 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.

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.
- Paper submitted to IEEE PESGM 2025

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.
- Implemented SparseInst on ResNet-50 and investigated performance.
- 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

UNDERGRADUATE RESEARCHER November 2022 - Present
• Collaborating with Dr.Derek Aguiar, o combine LLMs and tabular models to predict motion outcomes in legal cases. Additionally, building models using parameter-efficient fine-tuning for adversarial ML.

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