Sirihaasa Nallamothu

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Education

University of Illinois at Urbana-Champaign **Aug 2023 – Dec 2026**

Bachelor of Science in Computer Science, Stat Minor GPA: 3.95/4.0 *Urbana-Champaign, Illinois*

Leadership: ACM SIG AIDA Corporate Executive Chair & Website Developer

Awards: D. E. Shaw Discovery Fellowship, ACM Cutler-Bell Prize in Computing Association for Computing Machinery (POTS Research), NCWIT Bank of America Collegiate Tech Award

Work Experience

AbbVie, Machine Learning Drug Discovery **May 2024 – Present**

Machine Learning Drug Discovery Intern *Champaign, IL*

- Developed machine learning models (graph based, linear regression, XG boost) to predict heart rate safety endpoints in 2,000+ molecules with Python, RDKit and **PyTorch**. Implemented PADME model on dataset for ADME based property prediction.
- Preformed model hyper-param tuning and optimization. Utilized tSNE, PCA,random forest feature importance, for data analysis. Automated Python scripts for pre-processing, extraction, and data visualization. Presented initial findings to scientists and team leads

Hack 4 Impact, UIUC **August 2024 – Present**

Software Developer *Champaign, IL*

- Building powerful tools for social change to empower nonprofits and the civic sector through React, Node, Flask, MongoDB, Git, Tailwind. Currently building website for Hausa Language NLP model datasets. Projects here: https://github.com/hack4impact-uiuc

Howso, AI & Data Platform **Jan 2024 – May 2024**

Machine Learning & Software Development Intern *Champaign, IL*

- Modified ablation algorithm with case weighting to check number of ablated cases in the dataset and compared to previously unablated data using Python. Deployed anomoly detection code. Improved by 5% on cases. Researched best ablation algorithm in relation to MLE Evaluated effectiveness of the algorithm, intthe egrated platform with graph visuals of ablation dataset performance.

State Farm, Autopay Enroll Team **May 2023 – August 2023**

Software Engineering Intern *Normal, IL*

- Removed integration of toggles in databases and wrote j-units for the platform. Utilized C++, Java, and JavaScript to update platform for customers. Implemented UI changes through Soap API, and onto Autopay Enroll website. Improved website accessibility by 4%. Tested Autopay platform by generating test data for over 100 customer complaints.
- Winner of State Farm wide HackDay (400+ entries) with a machine learning algorithm for bike crash detection using Python and Tensorflow.

State Farm, Enterprise Technology **June 2022 – August 2022**

Software Engineering Intern *Normal, IL*

- Implemented JavaScript, Pug, HTML, and CSS to revamp the 'Employee Spotter Tool,' to increase efficiency and employee accessibility within the Auto and Fire team (40+ people). Improved functionality, and collaborated with cross-functional teams to integrate tool into existing systems.

Projects & Research

POTS & Machine Learning Research Study, UIUC **Aug 2021 – Present**

Lead Researcher *Champaign, IL*

- Constructing novel temporal multimodal neural networks for prediction of spontaneous fainting in Postural Orthostatic Tachycardia Syndrome Patients minutes in advance. Used Keras, Tensorflow, AWS, Python, Pandas, Pytorch.
- Trained CNN-LSTM model to identify onset vasovagal syncope episodes with an identification **F1 score of 0.89** and an AUC of 0.95. Model predicted the onset of syncope two minutes in advance with an F1 score of **0.69**.
- Collecting first-ever physiological signal data on POTS patients **(800 hours of data)**, analyzing **sliding window time series** data, on wearable devices. Cleaning and prepossessing signal data. Recruited participants, optimized and created machine learning models, evaluated efficiency of models, created Python scripts.
- **Awarded $40,000 grant** from Standing Up to POTS. Publication in 2nd round review at IEEE BHI; paper here: https://tinyurl.com/nallPaper

Skills

C++, Python, Java, JavaScript, Pandas, React JS, RDKit, Tensorflow, Keras SQL, Linux, AWS, HTML, R, Go, Scikit-Learn, Flask, Node.js, Swift/Ios Development, PyTorch, Data Visualization, Numpy, Matplotlib, Git, Docker, Conda, HuggingFace