Yujie (Vera) Chen

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Highly skilled and motivated Master's student with a strong background in ML and embedded software. Proficient in multiple programming languages including Python, MATLAB, C/C++, CUDA, seeking a thesis opportunity.

Education

4.5/5.0 **Embedded Systems - Software Track**, *KTH Royal Institute of Technology* | Stockholm, Sweden *2022-Present*

3.74/4.0 **Electronic Science & Engineering**, *Southeast University* | Nanjing, China *2019-2023*

Courses: Linear Algebra | Probability and Statistic | Programming for DS | Embedded Intelligence, etc.

Tech Stack

Languages **Python**, **MATLAB**, C/C++, embedded C, CUDA, LaTeX

ML & RL: Proficient in **deep learning and neural networks**, including **MLP**, **RNN**, and **LSTM**. Familiar with a variety of machine learning and reinforcement learning algorithms and time series forcasting.

Libraries: NumPy, **Tensorflow**, **Pytorch**, **Scikit-Learn**, XGBoost, minisom, etc.

Data Analysis: Pandas, Matplotlib, Seaborn, statsmodels, etc.

Projects

Time-Series Prediction and Anomaly Detection Project *2023*

IL2233 - Embedded Intelligence (Course Project)

- Accomplished diverse anomaly detection methods incorporating decomposition, prediction, and clustering approaches.
- Evaluated model performance by calculating the out-of-sample MSE for the LSTM, resulting in a value of 1.45e-05.
- Includes **neural network-based(MLP, RNN, and LSTM)**, prediction-based and clustering-based approaches, while considering both univariate and bivariate time series data.

5G Potential Customer Identification: A K-Means and Neural Network Approach *2021*

First prize *of The 14th Mathematical Contest in Modeling for Undergraduates of Southeast University*

- Developed a user classification model, resulting in the identification of four categories of users.
- Measured the success of the model with an accuracy of 95.3%.
- Achieved by utilizing K-means, **neural networks** and differential equations to predict non-5G users' likelihood of becoming 5G users, revealing four distinct user categories.

Activity prediction for chemical compounds *2022*

Highest score *in ID2214 - Programming for DS and won the* ***Assignment Competition Award 2022***

- Developed a predictive model using ML techniques to classify the activity of 156258 chemical compounds.
- Achieved an estimated AUC of 0.8708 and a test AUC of 0.8751, demonstrating the model's high level of accuracy.
- Realized through the utilization of sklearn, GridSearchCV, XGBoost, Random Forest, KNN, and Logistic Regression within a robust cross-validation framework.

QR Code Recognition and Supermarket Simulation System Based on STM32 Microcontroller *2022*

Group Leader

- Accomplished the development of a supermarket simulation system using the STM32 microcontroller, featuring QR code recognition and price calculation functionalities.
- Achieved through a comprehensive approach that combined software and hardware, involving C programming on Keil and physical soldering of various modules

Scaled Performance Analysis of iPIC3D Application with Multi-MPI Evaluation *2023*

DD2360 Course Project - Method in HPC(Obtained an 'A' grade)

- Accomplished comprehensive evaluation of iPIC3D application performance on Dardel, including bottleneck identification and optimization proposals.
- Measured the preference for Cray over OpenMPI for larger problem instances, with suboptimal scaling in both.
- These findings direct future efforts to enhance iPIC3D application efficiency on high-performance systems, with opportunities for expanded scalability testing.

Passions

Strength Training, Brazilian Jiu-jitsu, Clay Sculpture, Crochet