

# Zhiling Chen

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## EDUCATION

- University of Connecticut** Storrs, CT Aug.2023-May.2026 (expected)  
PhD in *Mechanical Engineering*
- Boston University** Boston, MA Sep.2021-Aug.2022  
Master of Science in *Applied Data Analytics* GPA: 3.72/4.0  
Coursework: Machine Learning, Data Science with python, Data Mining, Designing and Implementing a Data warehouse, Web Analytics and Mining
- Waterford Institute of Technology** Waterford, Ireland Sep.2020-June.2021  
Bachelor of Science (Honours) in *Software Engineering Practice* GPA: 3.6/4.0  
Coursework: Business Analytics, Distributed System, Application Security, Enterprise Architecture
- Nanjing University of Information Science & Technology** Jiangsu, China Sep.2017-June.2021  
Bachelor of Engineering in *Software Engineering*  
Coursework: Probability and Statistics, Algorithm Design, Database Design, Cloud Computing, Oracle

## RESEARCH INTEREST

- Federated Learning:** Data Heterogeneity (Non-IID Data), Privacy and security on heterogeneous devices  
**Hyperdimensional Computing:** Distributed Hyperdimensional Computing

## RESEARCH EXPERIENCE

- University of Connecticut (ISCL Lab)** Aug.2023-present  
PhD student, *supervised by Prof. Farhad Imani*
- Hierarchical Hyperdimensional Computing
  - Combination of Hyperdimensional Computing and Federated Learning
- Research on HPC Applications using Machine Learning-based Approximation** Aug.2022-Feb.2023  
Research Assistant Advisor: Wenqian Dong, Assistant Professor, Florida International University
- Analyzed power-grid systems and studied GNN, LSTM, and relevant literature
  - Proficient in Linux command-line operations and experienced in conducting learning activities on Linux systems
  - Researched the application trend of machine learning in power grid systems
  - Utilized a multidirectional LSTM model to predict the stability of a smart grid
  - Reproduced the project “Using Neural Network-based Approximation to Improve Performance of Ocean Modeling Simulation”
- Research on Nonlinear Programming in the Optimization of the Power System** Jan.2020-Mar.2020  
Intern, Research Assistant Advisor: Jovan Ilic, Associate Teaching Professor, Carnegie Mellon University
- Studied basic theories on nonlinear programming and optimization problems in machine learning
  - Implemented linear programming algorithm and genetic algorithm respectively based on Python and finally obtained the optimal solution of the general model of power system optimization problem by using genetic algorithm
  - Determined the proper time and location to invest and build proper type of transmission lines to meet the requirements of economical and reliable transmission of electricity, including single-stage grid planning models and multi-stage grid planning models
  - Established a transportation model through diagrams, merging the balance sheet and the freight rate table, and optimized the transportation plan

- Completed papers and project reports on quasi-Newton method (DFS and BFGS) research

## **WORK EXPERIENCE**

**Wuxi CHAOTONG Intelligent Research Institute Co., Ltd**

Jul.2019-Sep.2019

Research Intern, Data Analyst

Advisor: Mei Xuesong, Professor, Xi'an Jiaotong University

- Leveraged advanced tools such as machine learning and natural language processing to analyze complex data system issues, reducing manual processing time and improving accuracy.
- Developed intuitive analytical dashboards that visually conveyed root cause, degree of impact, and areas of impact for various data system issues, providing executives with critical insights to prioritize system failures and allocate resources.
- Assisted in data cleaning and analysis of product feedback survey data using Python and R
- Built predictive models using machine learning techniques to forecast customer demand and optimize inventory levels
- Managed and maintained a database of customer information, ensuring data accuracy and integrity
- Created data visualizations using Tableau to effectively communicate insights to stakeholders

## **ADDITIONAL INFORMATION**

**Programming:** skilled in Python, R, SQL, Tableau for data analysis; Proficient in linux, git, Latex, Java, JavaScript, Matlab, Excel, PowerPoint and Bloomberg;

**Machine Learning:** Classical&Penalized Regression Methods, Decision Tree, Regularization, Clustering, K-means, K Nearest Neighbors, Principle Component Analysis(PCA)

**Language:** Mandarin Chinese(native), English(fluent)

**Interests:** Go(Won Go section and medal), Skiing, Soccer, Basketball and Bodybuilding