Chenxi Hu

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Education

The University of Hong Kong - Doctor's degree Sep 2021 – Aug 2025(expected)

- Advisor: Dr. Yunhe Hou
- Research area: steady-state security region of power system, machine learning and its application in smart grid

Wuhan University - Bachelor's degree Sep 2016 – Jun 2020

- Major: Electrical Engineering and Its Automation
- **GPA: 3.94/4.0 / Grades: 92.6/100 / Ranking: 1/304**
- Minor：Finance

Awards and Honors

- **2018 China National Scholarship**
- **2017 China National Scholarship**
- 2019 Ultra High Voltage(UHV) Scholarship of State Grid Corporation of China
- 2019 The Cross-disciplinary Scholars in Science and Technology (CSST) program Scholarship in University of California, Los Angeles
- 2018 Wuhan University First-class Scholarship
- 2016 Wuhan University freshman scholarship
- 2020 Wuhan University Outstanding Graduates.
- 2017 Wuhan University Merit Students / 2016 Wuhan University Merit Students
- 1st prize of Wuhan University Undergraduate Extracurricular Academic Science and Technology Contest
- 2nd Prize of 2018 Mathematics Competitions for College Students in Hubei Province
- 1st prize of Outstanding Achievements in 2017 Summer Social Practice of Wuhan University
- 3rd Prizes of the 11th and 12th National University Students Electrical Math Modeling Competition
- 2nd Prize of 2019 National English Competition for College Students

Research Experience

Analysis of the Dynamic Characteristics of Central China's Social Economic Structure and Electricity Market Based on Social Computing and Artificial Intelligence Oct 2019 – Dec 2020 Wuhan

- Studied the construction of a fusion framework of social system signals and physical system signals and built a socio-economic electricity model of central China.
- Used pandas, excel to perform data processing. Analyzed China's electricity demand and economic structure, established a load-related economic indicator database based on China's macroeconomic indicators.
- Constructed a load forecasting model based on deep belief network. Used economic and electricity data from 30 provinces in China to perform mid- and long-term electricity forecasting. The forecast accuracy of test set reached 3.278%. Wrote and published an IEEE conference paper.
- Constructed LSTM-based mixing electricity forecasting model. Used Masking layer in Keras for mixed frequency modeling and used economic and electricity data from 30 provinces in China to perform mid- and long-term electricity forecasting. The forecast accuracy of test set reached 3.918%.

DC power system based on energy router Dec 2018 – Sep 2019

National University Student Social Practice and Science Contest on Energy Saving & Emission Reduction Wuhan

- Analyzed the application prospects of the energy router system and the creativity, feasibility, design and implementation plan of the work. Finished 80 pages proposal with teammates.
- Analyzed the operation mode and control strategy of the energy router system. Applied for an patent for invention as the patentee (pending) and assisted in writing a patent for utility model (published).
- Tried to perform data transmission between energy router and Internet server using DMA (Direct Memory Access) through RS-485 interface.

Visually induced motion sickness Jun 2018 – Aug 2018

Summer Undergraduate Research Program in Neuroscience at NYU Shanghai (SURP) Shanghai

- Used python to build a virtual reality environment in order to create a visual stimulation scene (A tunnel that can oscillate back and forth) for the experiments.
- Used MATLAB to do experimental data processing and analyzed variations in data. Calculated frequency spectrum, amplitude and phase frequency response using the body sway data records.
- Analyzed the correlation between visual stimuli and body sway signal after the visually induced motion sickness occurred. The results showed that human are especially sensitive to 0.2Hz visual stimuli.

Design of omnidirectional wireless power transmission device applied to smart home Sep 2017 – Jun 2018
Project of Innovation and Entrepreneurship Training of National Undergraduate of Wuhan University Wuhan

- Based on the Inductive-Coupled Resonant Wireless Power Transfer technology, studied the application prospect of the omnidirectional wireless power transmission technology in smart homes.
- Read related papers, extracted technological innovations and wrote 4 related patents.

Publication

- Hu, Chenxi, et al. "Black swan event small-sample transfer learning (BEST-L) and its case study on electrical power prediction in COVID-19." Applied Energy 309 (2022): 118458.
- Hu, Chenxi, et al. "Mid-Long Term Electricity Consumption Forecasting Analysis Based on Cyber-Physical-Social System Architecture." 2020 IEEE 16th International Conference on Automation Science and Engineering (CASE). IEEE, 2020.

International Experience

The Cross-disciplinary Scholars in Science and Technology (CSST) program in University of California, Los Angeles (UCLA) Jul 2019 – Sep 2019
Research topic: Physics-based Neuron Network

- Studied multiple object tracking algorithm and the Faster R-CNN structure. Tried to combine the physical model with the neural network to improve the accuracy of the tracking algorithm.

Activities

Media Center of School of Electrical Engineering and Automation, Wuhan University - Deputy director Sep 2016 – Jun 2019

- Responsible for operating the Wechat official account of School of Electrical Engineering and Automation, Wuhan University with 8000 subscribers. Organized, classified and maintained daily operating data.
- Responsible for reporting news and writing articles. Pushed 55 articles with over 13000 pageviews.
- Responsible for the management of the Media Center of School of Electrical Engineering and Automation. Organized team building activities. Assisted the organization of the student union's activities and communicated with other departments in time in order to assist the activities to proceed smoothly.

Enactus WHU Club - Project manager Sep 2017 – Jun 2018

- Joined in an entrepreneurship program aims at recycling kitchen waste to produce enzyme detergent.
- Responsible for market research of the Wuhan University Engineering Department community. Recorded, organized and classified the data. Analyzed the acceptability of enzyme detergent, make optimization suggestions for the product and wrote investigation report.
- Collected and organized related data of enzyme detergent. Completed primary fermentation experiment.

Wuhan University Library – Volunteer Sep 2017 – Jun 2019

- Responsible for showing visitors around the Wuhan University Library and introducing the history and the general situation of the library. Gave a reception to over 100 people.
- Assisted the library officers to organize library's daily activities and publicity works.

Others

- Skills: Python, MATLAB, Office, Visio, Xmind
- Language：English (CET-6: 580, TOEFL: 106, GRE: 323)
- Certificate: National Computer Rank Examination (C language)