

# Yanxin Chen

✉ [ychen630@alumni.jh.edu](mailto:ychen630@alumni.jh.edu) | 🌐 [Homepage](#)

## Education

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### Johns Hopkins University

*Master of Science in Applied Economics*

Washington D.C., United States

*Aug. 2023 – Aug. 2024*

- Key Coursework: Time Series Forecasting, Cost-Benefit Analysis, Financial Management, Statistics

### Donghua University

*Bachelor of Management in Accounting: GPA:3.9/4.0*

Shanghai, China

*Sept. 2018 – Jun. 2022*

- Honors: Excellent Graduate (2022); Excellent Academic Performance (2019-2020); First-class Scholarship (2019-2020; 2018-2019); Outstanding Student (2018-2019); University Scholarship (2018-2019)

## Research Experience

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### Zhejiang University School of Medicine

*Research Assistant, Computational Neuroscience Lab (Advisor: Xiongjie Yu)*

Apr. 2025 - Present

*Hangzhou, China*

- Modeled cortical circuits for auditory temporal integration using delay-based synapses in BrainPy
- Simulated and analyzed offset response behaviors using LIF neurons with PSTH and raster evaluation
- Designed deep neural network models (CNN-LSTM) to classify attention and fatigue levels from EEG datasets
- Performed STFT- and wavelet-based feature extraction to improve classification accuracy ( $> 85\%$ )
- Developed data pipelines for multi-channel EEG analysis using PyTorch, and NumPy
- Created visualizations and automated analysis workflows to support experimental and clinical data studies

### Carnegie Mellon University Department of Mathematical Sciences

*Research Assistant (Advisor: Shlomo Ta'asan)*

Jun. 2025 – Present

*Online*

- Conducting ICU-based medical time-series modeling for early detection of sepsis using a Kaggle dataset ( 45,000 samples, 40+ clinical features)
- Developed a full machine learning pipeline for preprocessing, including temporal alignment, missing value imputation, and outlier handling
- Built LSTM and XGBoost models to classify high-risk patients up to 6 hours before onset; improved recall through sequential feature engineering
- Extracted features such as temporal gradients, moving statistics, and frequency-domain descriptors to enhance model sensitivity
- Validated models using stratified cross-validation, AUC optimization, and confusion matrix analysis
- Created interactive visualizations for data exploration and model interpretation

### University of Illinois Urbana-Champaign School of Information Science

*Research Assistant (Advisor: Robert J. Brunner)*

Jul. 2025 – Present

*Online*

- Explored dynamic community structures in SP 500 company networks derived from stock price time series
- Analyzed information flow between companies using Transfer Entropy (TE), followed by temporal network construction at 30-minute and weekly intervals
- Applied six community detection algorithms (e.g., modularity maximization, label propagation) across time-evolving graphs
- Focused on interactive and multi-perspective network visualizations to reveal structural evolution in financial networks
- Designed dynamic visual formats (e.g., GIF animations, Plotly slider graphs, multi-timepoint comparisons) to show changes in community structures
- Developed new metrics and visual dashboards to track temporal trends in community count, node centrality, and TE strength
- Created interactive tools enabling users to explore node neighbors, compare community structures across time, and interpret lifecycle dynamics of communities

Professional Experience

<b>Hangzhou Wenyi Holarte Technology Development Co., Ltd.</b> <i>Healthcare Data Analyst Intern - Python, Pandas, Seaborn, Excel</i> <ul style="list-style-type: none"><li>Analyzed structured clinical trial data using Python and built pipelines for data quality assurance</li><li>Developed summary dashboards using Seaborn and Streamlit for research communication</li><li>Automated batch cleaning of device logs and metadata from 20,000+ patient files</li></ul>	Sept. 2024 - Apr. 2025 Hangzhou, China
<b>Yongjia Rural Commercial Bank Co., Ltd.</b> <i>Banking Data Intern - Python, Excel VBA, SQL, Pandas</i> <ul style="list-style-type: none"><li>Developed Excel macros and Python scripts to automate daily transaction summaries and risk audits</li><li>Maintained structured client transaction logs using CSV-to-SQL conversion for downstream analytics</li><li>Supported backend data cleaning and batch processing for 10,000+ customer profiles</li></ul>	Sept. 2022 – Feb. 2023 Wenzhou, China
<b>State Grid Yongjia Power Supply Company</b> <i>Financial Data Analyst Intern - Python, Pandas, Excel (macros)</i> <ul style="list-style-type: none"><li>Designed automated Excel models and Python scripts to batch-process 7,000+ revenue and 11,000+ expenditure records</li><li>Created dashboards to visualize transformer asset usage cycles and detect underutilized resources</li><li>Built rule-based anomaly detection system for expenditure approval logic</li></ul>	Jul. 2022 – Sept. 2022 Wenzhou, China
<b>BDO China Shu Lun Pan CPAs</b> <i>Audit Intern (Data Analytics Group) - Python, Excel, PivotTables, NumPy</i> <ul style="list-style-type: none"><li>Used Python and Excel to audit financial reports and trace inconsistencies across 14 companies</li><li>Built sampling models and variance calculators to highlight possible misstatements</li><li>Assisted in automated generation of audit evidence logs and cross-period financial consistency checks</li></ul>	Dec. 2020 – Mar. 2021 Shanghai, China

Projects

<b>Stock Trading Web Application</b>   <i>Python, Flask, SQLite, Jinja, HTML, Bootstrap</i> <ul style="list-style-type: none"><li>Built a stock trading simulator with user registration, session control, and transaction validation</li><li>Integrated real-time stock quote retrieval and dynamic portfolio updates</li><li>Designed a responsive dashboard to visualize stock holdings and cash balance</li></ul>	Jun. 2025 – Jul. 2025
<b>Budget Tracker Application</b>   <i>Python, Tkinter, SQLite, Plotly, Pandas</i> <ul style="list-style-type: none"><li>Developed a personal finance app with full CRUD operations and category filtering</li><li>Built interactive charts to visualize expenses by category using Plotly</li><li>Modularized codebase for GUI, data logic, and front-end integration</li></ul>	Jul. 2025
<b>Financial Analysis of Yili Group</b>   <i>Python, Pandas, NumPy, Matplotlib, Seaborn, Excel</i> <ul style="list-style-type: none"><li>Cleaned and analyzed 10 years of financial statements using Python</li><li>Conducted ratio analysis and DuPont decomposition across time periods</li><li>Visualized key indicators and built net profit forecasting using linear regression</li></ul>	May. 2021 – Jun. 2021
<b>Blockchain-Based Accounting Reform</b>   <i>Python, Web3.py, JSON, Excel, LaTeX</i> <ul style="list-style-type: none"><li>Simulated blockchain-based accounting models with smart contract prototypes</li><li>Built dummy triple-entry ledgers and automated transaction logs</li><li>Summarized findings and feasibility assessments in an interactive LaTeX report</li></ul>	Nov. 2020 – Nov. 2021

Publications

[1] Yanxin Chen and et al. EEG neural indicator of temporal integration in the human auditory brain with clinical implications. *Communications Biology*, 8(1109), 2025.

[2] Yanxin Chen and et al. Hierarchical temporal processing in the primate thalamocortical system. Manuscript under review at *Research*, 2025.

Skills

**Programming and Tools:** Python (Pandas, NumPy, PyTorch, scikit-learn, NetworkX, Plotly/Dash, BrainPy), SQL, STATA, SPSS, HTML, Excel

**Languages:** English (Fluent), Chinese (Native)

**Online Coursework:** HarvardX CS50x (Intro to CS), CS50AI (Intro to AI with Python)