

Yanxin Chen

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

Education

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

- Supervised by Xiaokang Zhao
- 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

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 NCSA

Research Assistant

Jan. 2024 – Jun. 2024

Online

- Developed a deep learning-based analytical pipeline (SpiceMix + Louvain/GMM) to identify latent metagenes and cluster cell types from spatial transcriptomics data.
- Conducted alignment of ST slices using LDDMM and restored 3D tissue structures via interpolation (linear, spline methods) and rasterization-based complexity reduction.
- Validated clustering results with manual annotation using STdeconvolve and correlation analysis on Beta/Theta matrices.
- Constructed 3D spatial neighborhoods and performed statistical hotspot analysis (LISA: Moran's I, Geary's C) to localize functionally enriched regions.
- Applied FDR correction and cosine similarity metrics to evaluate resampling methods, optimizing 3D gene expression fidelity.

Professional Experience

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

Projects

Financial Analysis of Yili Group <i>Python, Pandas, NumPy, Matplotlib, Seaborn, Excel</i> <ul style="list-style-type: none">Retrieved and cleaned 10 years of financial data from public reports using Python scriptsApplied Pandas and NumPy to compute profitability, solvency, and efficiency ratios across timeImplemented a DuPont decomposition model and visualized KPIs using Matplotlib and SeabornBuilt a forecasting module for net profit growth using linear regression and time series smoothing	May. 2021 - Jun. 2021
Blockchain-Based Accounting Reform <i>Python, Web3.py, JSON, Excel, LaTeX</i> <ul style="list-style-type: none">Conducted research on smart contract-based accounting models using Python + Web3 simulation toolsDesigned prototypes of automated transaction logging and triple-entry ledgers using dummy JSON dataInterviewed blockchain industry experts to validate feasibility of decentralized accounting processesDocumented findings in LaTeX and produced interactive visual explanations of process flows	Nov. 2020 - Nov. 2021

Publications

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

[2] Yanxin Chen and et al. A neural indicator of temporal integration in the human auditory brain. Manuscript under review at *Communications Biology*, 2025.

Skills

Programming and Tools: Python (Pandas, NumPy, PyTorch, scikit-learn), SQL, STATA, SPSS, HTML, Excel
Languages: English (Fluent), Chinese (Native)
Online Coursework: HarvardX CS50x (Intro to CS), CS50AI (Intro to AI with Python)