



# XINXING WU, PH.D.

Educator & Researcher | Applied ML Scientist | AI Data Scientist (U.S. Permanent Resident)

GitHub — <https://github.com/xinxingwu-uk> Homepage — <https://xinxingwu.github.io>

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Student-centered educator with 8+ years of university teaching experience across in-seat and online Computer Science (CS), Artificial intelligence (AI), and Management Information Systems (MIS) programs in the U.S. and internationally. Since 2023, I have designed and taught a broad portfolio of 19+ different undergraduate and graduate courses, from introductory programming to advanced Machine Learning (ML) and AI, with a strong emphasis on curriculum innovation and continuous improvement. My teaching integrates active, transparent learning, project-based assignments, and real-world datasets, consistently earning top evaluations while mentoring about 50 CS and MIS undergraduate and graduate students toward research opportunities, internships, and industry-ready careers.

Interdisciplinary, hands-on AI scientist with a proven track record of transforming top-tier research into open-source tools and real-world impact. As first author at **NeurIPS**, **AAAI**, and **IJCAI**, I have developed methods in feature selection, graph neural networks, survival analysis, and algorithmic stability, and deployed them as reproducible Python pipelines and analytics dashboards for health informatics, business intelligence, and decision support. My work spans predictive modeling, multimodal learning, and Large Language Model (LLM) evaluation/fine-tuning, with a sustained focus on rigorous methodology, transparent and reproducible evaluation, and collaborative leadership across engineering, business, and biological data teams.

## TEACHING/DESIGNING COURSES (since January 2023)

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### Computer Science - Undergraduate

- CSE-150: Introduction to Computer Science
  - CSE-200: Computer Programming I
  - CSE-210: Computer Programming II
  - CSE-250: Database Systems
  - CSE-300: Human-Computer Interaction
  - CSE-310: Platform Technologies
  - CSE-320: Networking
  - CSE-400: Cybersecurity
  - CSE-410: Mobile Computing
  - CSE-420: Emerging Technology
  - CSE-430: AI in Advanced Data Analytics
  - CSE-490: Capstone
  - CSE-495: Internship
- .....

Teacher, Spring 2023, Spring 2024, Spring 2025

Teacher, Fall 2023

Designer & Teacher, Spring 2023, Spring 2024

Designer & Teacher, Spring 2023, Spring 2024, Spring 2025

Designer & Teacher, Fall 2023, Fall 2024, Fall 2025

Designer & Teacher, Fall 2023, Fall 2024

Designer & Teacher, Spring 2024, Spring 2025

Designer & Teacher, Fall 2024, Fall 2025

Designer & Teacher, Fall 2024, Fall 2025

Designer & Teacher, Spring 2025

Designer, Spring 2025

Designer & Teacher, Spring 2025

Designer & Teacher, Summer 2024

### Management Information Systems - Graduate

- MIS-502: Business Programming
- MIS-612: Data and Information Management
- MIS-632: Intelligent Business Systems
- MIS-642: MIS Security
- MIS-652: Business Analytics
- MIS-662: Machine Learning in MIS

Designer, Fall 2023

Designer & Teacher, Fall 2023

Designer, Spring 2024; Teacher, Fall 2025

Designer, Spring 2024

Designer, Fall 2023; Teacher, Fall 2025

Designer, Fall 2023; Teacher, Fall 2025

## OVERALL EVALUATION FROM STUDENTS

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I am a dedicated, student-centered professor with a strong record of excellence in university-level teaching across diverse computer science disciplines. I am consistently recognized for clarity in instruction, relevance of course content, and strong engagement with students; reflected in exceptional teaching evaluations with average scores ranging from **4.75 to 5.00** out of 5.00. I foster critical thinking, encourage active classroom discussion, and connect theoretical concepts to real-world applications. I am committed to providing timely, constructive feedback and cultivating an inclusive, supportive learning environment that drives student motivation and academic success.

I also incorporate innovative AI technologies to enhance student engagement, such as [Singing Syllabi with Virtual Avatars](#).

## ADVISING EXPERIENCE

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**Provide academic and career guidance to about 50 Computer Science undergraduate and Management Information Systems graduate students, supporting their academic progression and professional development.**

- Assist students in course selection, degree planning, and navigating institutional policies to ensure timely graduation.
- Mentor students on internship opportunities, research involvement, and career pathways in the tech industry.
- Collaborate with faculty and administration to enhance student success and retention initiatives.
- Address individual student concerns, offering tailored support for academic challenges and career aspirations.

## COMMUNITY ENGAGEMENT

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|---|-----------------------|
| · Math Search Committee, Midway University,             | <u>2023 - 2024</u>    |
| · Computer Science Search Committee, Midway University, | <u>2024 - 2025</u>    |
| · Faculty Leadership Council, Midway University,        | <u>2024 - 2025</u>    |
| · Institutional Review Board, Midway University,        | <u>2025 - Present</u> |

## EXPERIENCE

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**Assistant Professor at Midway University, Kentucky, United States,** 2023 - Present  
Research - Conduct applied research translating to open-source repositories and classroom adoption, such as Singing Syllabi with virtual avatars. Design and deliver practice-oriented ML projects. *In-seat and Online Teaching* - Develop a diverse array of Computer Science courses and Management Information Systems courses spanning introductory to advanced levels. Also, as a computer science major advisor, provide guidance and mentorship to support students' academic and professional growth

**External Experts Program at Amazon MTurk (Part-time),** 2025 - Present  
Design challenging math/analysis tasks to probe LLM reasoning; create rubrics and analyzed failure modes; suggest model improvements.

**Principal Investigator at Shanghai Threebio Technology Co., Ltd. (Part-time), Shanghai, China,** 2016 - 2018  
Built demand-forecasting and statistical computing pipelines from historical purchase data; delivered actionable insights to practice-oriented AI/ML projects.

**Associate Professor at Shanghai Technical Institute of Electronics and Information, Shanghai, China,** 2013 - 2018

Taught a broad range of computer science courses such as programming languages, mobile development, web development, database systems, etc.; led hands-on projects integrating Arduino with Python and Java SE.

**Algorithm Engineer at Shanghai Advanced Research Institute of CAS, Shanghai, China, 2012 - 2013**

Implemented high-throughput algorithms on many-core Tilera; optimized data-parallel performance in Python/C-adjacent environments.

**Algorithm Developer at Shanghai Alcatel Network Support Systems Co., Ltd., Shanghai, China,** 2011 - 2012

Developed analytics features using Java/SQL; collaborated with platform engineers to integrate algorithms into production services.

## EDUCATION

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|---|-------------|
| · Postdoctoral Scholar, ML & Data Analysis - University of Kentucky, United States, | 2019 - 2022 |
| · Visiting Researcher, ML - Boston University, United States,                       | 2018 - 2019 |
| · Ph.D., Computer Applications Technology - East China Normal University, China,    | 2007 - 2011 |

## TECHNICAL SKILLS

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- **ML & Stats:** feature selection, deep learning, GNNs, survival analysis, algorithmic stability, anomaly detection, ensemble learning, multimodal learning, model design and evaluation, LLM Finetuning, etc.
- **Data & Visualization:** Pandas, NumPy, Matplotlib, Seaborn; dashboards (Plotly/Streamlit), SQL.
- **Libraries:** TensorFlow/Keras/PyTorch, Scikit-learn, Transformers, SciPy, Scrapy, Gradio, etc.
- **Programming:** Python, R, Java, C#, Ruby; React/React native; PHP, JavaScript, etc.
- **Workflow:** GitHub, JupyterLab/PyCharm, Power BI/Tableau, Linux, GPU training (TACC; Colab)
- **Certifications:** Red Hat Certified Engineer (RHCE); Red Hat Certified System Administrator (RHCSA)

## SELECTED PROJECTS - OPEN SOURCE

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- **FAE** - Fractal Autoencoders for Feature Selection (AAAI'21). Tensorflow+Keras: [Repo](#)
- **UFS** - Stability & Generalization for Unsupervised Feature Selection (NeurIPS'21). [Repo](#)
- **DGAE** - Deep Graph Neural Network for Link Prediction (IJCAI'22). [Repo](#)
- **AD\_Survival** - DeepSurv pipeline for clinical survival analysis. scikit-learn: [Repo](#)
- **SSVA** - Singing Syllabi with virtual avatars (2025). LLMs: [Repo](#)
- **JS Projects** - [Repo](#)

## SELECTED PUBLICATIONS

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[1] **Xinxing Wu**, Junping Zhang, Wang Fei-Yue. Stability-based Generalization Analysis of Distributed Learning Algorithms for Big Data. *IEEE Transactions on Neural Networks and Learning Systems*, 2020, 31 (3), 801-812. ↗[Paper link](#)

[2] **Xinxing Wu**, Qiang Cheng. Fractal Autoencoders for Feature Selection. *The 35th AAAI Conference on Artificial Intelligence (AAAI 2021)*. 2021. ↗[Paper link](#) ↗[Paper codes](#)

[3] **Xinxing Wu**, Qiang Cheng. Algorithmic Stability and Generalization of An Unsupervised Feature Selection Algorithm. *The 35th Conference on Neural Information Processing Systems (NeurIPS 2021)*. 2021. ↗[Paper link](#) ↗[Paper codes](#)

[4] **Xinxing Wu**, Chong Peng, Donna M. Wilcock, et al. PRIME Uncovers Circadian Oscillation

Patterns and Links with Alzheimer's Disease in Untimed Genome-Wide Gene Expression Data across Multiple Regions of Human Brain. *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*, 2021, 17 (S5), e053266. ↪[Paper link](#)

[5] **Xinxing Wu**, Chong Peng, Peter T. Nelson, et al. Random Forest-Integrated Analysis in AD and LATE Brain Transcriptome-Wide Data to Identify Disease-Specific Gene Expression. *PLOS One*, 2021, 16 (9), e0256648. ↪[Paper link](#) ↪[Paper codes](#)

[6] **Xinxing Wu**, Chong Peng, Peter T. Nelson, et al. Deep Learning Algorithm Reveals Probabilities of Stage-Specific Time to Conversion in Individuals with Neurodegenerative Disease LATE. *Alzheimer's & Dementia: Translational Research & Clinical Interventions*, 2022, 8(1):1-9. ↪[Paper link](#) ↪[Paper codes](#)

[7] **Xinxing Wu**, Qiang Cheng. Deepened Graph Auto-Encoders Help Stabilize and Enhance Link Prediction. *The 31st International Joint Conference on Artificial Intelligence and the 25th European Conference on Artificial Intelligence (IJCAI 2022)*. 2022. ↪[Paper link](#) ↪[Paper codes](#)

[8] Chong Peng, Yang Liu, Yongyong Chen, **Xinxing Wu**, Andrew Cheng, Zhao Kang, Chenglizhao Chen, Qiang Cheng. Hyperspectral Image Denoising Using Non-convex Local Low-rank and Sparse Separation with Spatial-Spectral Total Variation Regularization. *IEEE Transactions on Geoscience and Remote Sensing*, 2022, 60. ↪[Paper link](#)

[9] **Xinxing Wu**, Chong Peng, Peter T. Nelson, et al. Machine Learning Approach Predicts Probability of Time to Stage-Specific Conversion of Alzheimer's Disease. *Journal of Alzheimer's Disease*, 2022, 90 (2), 1-13. ↪[Paper link](#) ↪[Paper codes](#)

[10] **Xinxing Wu**, Peter T. Nelson, Qiang Cheng. Positive effect of moderate alcohol intake for AD. *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*, 2023, 19, e063758. ↪[Paper link](#)

[11] **Xinxing Wu**. Singing Syllabi with Virtual Avatars: Enhancing Student Engagement Through AI-Generated Music and Digital Embodiment. <https://arxiv.org/abs/2508.11872>, 2025. ↪[Paper link](#)

## ACADEMIC ACTIVITIES

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- **Program Committee Member of International Conferences:** NeurIPS, ICML, AAAI, CVPR, IJCAI, ICLR, ICCV, ECCV, WACV, WWW, AMIA, FSDM, MLIS, CBDSE (Technical Chair). ...
- **Journal Reviewer:** TMLR, CAAI Transactions on Intelligence Technology, Artificial Intelligence in Medicine, Heliyon, ...
- **Grant:** PI, Shanghai Talent Development Fund.

## SOFTWARE COPYRIGHTS

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[1] **Xinxing Wu**, Junyan Li. The visualization measurement tool of Software reliability v2.0 (2014SR117616, Java SE), software copyright, 2014, 8 (In Chinese)

[2] Junyan Li, Hao Lu, **Xinxing Wu**, Feng Tao. The visualization calculation tool of sample data v1.0 (2014SR079068, Java SE), software copyright, 2014, 6 (In Chinese)