

# ENZE XU

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Ph.D. in Computer Science, College of William & Mary

## EDUCATION

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- School of Computing, Data Sciences & Physics, College of William and Mary, Williamsburg, U.S.** Aug. 2023 – Present  
Ph.D. Candidate in Computer Science (GPA: 4.0/4.0)
- Graduate School of Arts and Sciences, Wake Forest University, North Carolina, U.S.** Aug. 2021 - May 2023  
M.S. in Computer Science (GPA: 4.0/4.0)
- School of Electronics Engineering and Computer Science, Peking University, Beijing, China** Sep. 2016 - Jul. 2020  
B.S. in Data Science and Big Data Technology

## RESEARCH EXPERIENCES

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**College of William & Mary | Research Assistant** Aug. 2023 – Present

Advisor: [Yifan Sun](#), Assistant Professor in the Computer Science Department at the College of William & Mary

- Design and propose DaisenBot, a multimodal GenAI assistant for GPU performance visualization that serves as a research instrument to investigate these questions and supports context curation, visualization-directed explanation, and reasoning transparency
- Design and implement an NVIDIA-targeted version of MGPUsim, extending this Akita-based GPU simulator to support detailed performance modeling and analysis of NVIDIA GPU architectures

Advisor: [Huajie Shao](#), Assistant Professor in the Computer Science Department at the College of William & Mary

- Propose an invariant physical dynamics identification framework to identify invariant physical dynamics from data collected from multiple environments.

**Wake Forest University | Research Assistant** Aug. 2021 – Aug. 2023

Advisor: [Minghan Chen](#), Assistant Professor in the Computer Science Department at Wake Forest University

- Propose Fourier-enhanced Neural Networks (FNN) to solve the performance bottleneck of complex PDE models
- Design a Graph Encoder (AutoEncoder, CNN, etc.) for stage stratification in the protein adsorption process (See Publications)
- Propose Multimodal Spatiotemporal Stratification Network, a DNN-based neural network for Subtype Identification in Alzheimer's Disease (See Publications)

**System Software Research Laboratory | Peking University | Research Assistant** Apr. 2019 - Jul. 2020

Advisor: [Gang Huang](#), Professor and Deputy Director of the Software Research Institute at the School of EECS, Peking University

- Design and program blockchain-based smart contracts to control the use of smart home devices
- Propose an adaptive strategy for cloud platforms to schedule resource requests in real-time and efficiently (See Publications)
- Lead a team with five laboratory members to design a Sunshine Interview system based on the blockchain smart contract
- Develop an implementation of the resource search engine based on blockchain smart contracts

**Key Lab of High-Confidence Software Technology | Peking University | Research Assistant** Aug. 2018 - Apr. 2019

Advisor: [Xuanzhe Liu](#), Professor at the School of Electronics Engineering and Computer Science, Peking University

- Design a batch algorithm to extract page features from APK files based on the Android debug bridge (ADB) tool

- Propose a machine-learning-based approach to helping developers construct a Quick App from an existing native app (See Publications)
- Learn and develop code-controlled application programming interfaces (APIs) based on known APK files

## **PUBLICATIONS**

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- **Xu, E.**, Coonley, J., Xu, D., & Sun, Y. (2025). DaisenBot: Human-AI Collaboration in GPU Performance Analysis with Multi-Modal AI Assistant. *The 3rd Workshop on Computer Architecture Modeling and Simulation (CAMS 2025)*. DOI: N/A. <https://sarchlab.org/cams25>
- Xu, C., **Xu, E.**, Xiao, Y., Yang, D., Wu, G., & Chen, M. (2025). A multiscale model to explain the spatiotemporal progression of amyloid beta and tau pathology in Alzheimer's disease. *International Journal of Biological Macromolecules*, 310, 142887. DOI: 10.1016/j.ijbiomac.2025.142887. <https://doi.org/10.1016/j.ijbiomac.2025.142887>
- Chen, C. \*, **Xu, E. \***, Yang, D., Yan, C., Wei, T., Chen, H., ... & Chen, M. (2025). Chemical environment adaptive learning for optical band gap prediction of doped graphitic carbon nitride nanosheets. *Neural Computing and Applications*, 37(5), 3287-3301. DOI: 10.1007/s00521-024-10775-1. <http://doi.org/10.1007/s00521-024-10775-1>
- Wang, Y., Zhao, H., Lin, H., **Xu, E.**, He, L., & Shao, H. (2025). A Generalizable Physics-Enhanced State Space Model for Long-Term Dynamics Forecasting in Complex Environments. In *Proceedings of the 42nd International Conference on Machine Learning (ICML 2025)*, PMLR 267:65708-65737. DOI: N/A. <https://proceedings.mlr.press/v267/wang25ex.html>
- Su, J., Ma, J., Tong, S., **Xu, E.**, & Chen, M. (2024, March). Multiscale Attention Wavelet Neural Operator for Capturing Steep Trajectories in Biochemical Systems. In *Proceedings of the AAAI Conference on Artificial Intelligence* (Vol. 38, No. 13, pp. 15100-15107). DOI: 10.1609/aaai.v38i13.29432. <https://doi.org/10.1609/aaai.v38i13.29432>
- **Xu, E. \***, Zhang, J. \*, Li, J., Song, Q., Yang, D., Wu, G., & Chen, M. (2024). Pathology steered stratification network for subtype identification in Alzheimer's disease. *Medical Physics*. DOI: 10.1002/mp.16655. <https://doi.org/10.1002/mp.16655>
- Wang, J., **Xu, E.**, Xiao, Y., Xu, C., & Chen, M. (2023, December). Modeling of AMPK Regulatory Network in Alzheimer's Disease. In *2023 IEEE International Conference on Bioinformatics and Biomedicine (BIBM)* (pp. 3832-3839). IEEE. DOI: 10.1109/bibm58861.2023.10385846. <https://doi.org/10.1109/BIBM58861.2023.10385846>
- Chu, X., Zhao, H., **Xu, E.**, Qi, H., Chen, M., & Shao, H. (2023). Neural Symbolic Regression using Control Variables. *arXiv preprint arXiv:2306.04718*. arXiv:2306.04718. <https://doi.org/10.48550/arXiv.2306.04718>
- Chen, J., **Xu, E.**, Wei, Y., Chen, M., Wei, T., & Zheng, S. (2022). Graph Clustering Analyses of Discontinuous Molecular Dynamics Simulations: Study of Lysozyme Adsorption on a Graphene Surface. *Langmuir*, 38(35), 10817-10825. DOI: 10.1021/acs.langmuir.2c01331. <https://doi.org/10.1021/acs.langmuir.2c01331>
- Zhang, J., **Xu, E.**, & Chen, M. (2022, August). AT [N]-net: Multimodal Spatiotemporal Network for Subtype Identification in Alzheimer's Disease. In *Proceedings of the 13th ACM International Conference on Bioinformatics, Computational Biology and Health Informatics* (pp. 1-1). DOI: 10.1145/3535508.3545103. <https://doi.org/10.1145/3535508.3545103>

- Dong, H., **Xu, E.**, Jing, X., Cai, H., & Huang, G. (2020, November). Adaptive Request Scheduling for Device Cloud. In *2020 IEEE International Conference on Services Computing (SCC)* (pp. 394-403). IEEE.  
DOI: 10.1109/SCC49832.2020.00058. <https://doi.org/10.1109/SCC49832.2020.00058>
- Liu, Y., **Xu, E.**, Ma, Y., & Liu, X. (2019, July). A First Look at Instant Service Consumption With Quick Apps on Mobile Devices. In *2019 IEEE International Conference on Web Services (ICWS)* (pp. 328-335). IEEE.  
DOI: 10.1109/ICWS.2019.00061. <https://doi.org/10.1109/ICWS.2019.00061>

## **WORK EXPERIENCES**

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**Microsoft Asia-Pacific Research & Development Group** | Big Data Team | Developer Intern | Beijing. Jul. 2019 - Oct. 2019

- TypeScript & JavaScript | Design some functions of user visual state management interface of A365 software products
- JavaScript | Implement the design requirements of UI controls from designers
- TypeScript & HTTP-Get/Post | Contact the data back-end team and propose a new in-group HTTP query specification

**Shanghai Jujun Technology Co., Ltd** | Big Data Group | Developer | Shanghai Oct. 2020 – Jun. 2021

- Python, YOLOv5 | Adopt open-source functions to recognize faces in videos
  - Taught colleagues to learn related technologies under the leadership of my supervisor
  - GitHub Link: [https://github.com/AaronLegenson/Yolov5\\_Guide](https://github.com/AaronLegenson/Yolov5_Guide)
- Python, OpenCV | Identify complex captcha on certain websites through Python scripts
- Hive SQL, MySQL & Python | Based on the data interface of user enterprises' database, develop big data indicators to evaluate the companies' business status and credit ranking

## **PATENTS**

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- Chinese Patent: CN 112702390 A - Networking method and device for blockchain-based smart contract resources
- Chinese Patent: CN 112541019 A - Search method and device for blockchain resources

## **AWARDS & SCHOLARSHIPS**

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- Research Assistantship Scholarship, Wake Forest University Aug. 2022
- Research Assistantship Scholarship, Wake Forest University Aug. 2021
- Award of Excellence, The Third China Blockchain Development Competition (Top 5%) Jul. 2019
- First Prize, 2018 China Undergraduate Mathematical Contest in Modeling, Beijing Group (Top 1%) Sep. 2018

## **ACTIVITIES**

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**Peking University Student Union** | Publicity Department | Secretary Sep. 2016 - Sep. 2017

- Participate in a one-year interview and compilation of the quarterly magazine Inside PKU, the most influential student magazine of Peking University
- Responsible for originality and maintenance of mini-games on the WeChat subscription of the students' union

## **SKILLS & INTERESTS**

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- Programming Languages (experienced): Python, C/C++, SQL, MATLAB, JavaScript, TypeScript, Verilog, etc.
- Applications: PyCharm, VS Code, MySQL, Visual Studio, Hive SQL, Hadoop, etc.
- Proficient in software development in Linux, macOS, and Windows
- Homepage: <https://xuenze.com/>
- GitHub: <https://github.com/EnzeXu/>
- Interests: Go, Tennis, Table Tennis, Badminton