

Yuxuan Zeng

2001-08

Ph.D. (Candidate)

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Education

Sep. 2026–Present	University of Science & Technology of China School of Artificial Intelligence & Data Science Intelligent Science & Technology	Ph.D. (Candidate)
Sep. 2023–Jun. 2026	Wuhan University School of Integrated Circuits Electronic Science & Technology	M.Phil.
Sep. 2019–Jun. 2023	Wuhan University of Technology School of Information Engineering Communication Engineering	B.Eng.
Sep. 2016–Jun. 2019	Ouhai High School of Zhejiang Province	High School

Publications

- Zeng Y, Cao W*, Zuo Y, et al. Accelerating the Discovery of Materials with Expected Thermal Conductivity via a Synergistic Strategy of DFT and Interpretable Deep Learning. *Mater. Futures*, 2025, 4(4): 045602. CAS Q1 (Top), IF = 12.3.
- Zeng Y, Ling G, Zhang H, et al. Artificial Intelligence-Driven Multivariate Integration for Pulmonary Arterial Pressure Prediction in Pulmonary Hypertension. *npj Digit. Med.*, 2026, 9: 56. CAS Q1 (Top), IF = 18.0.
- Zeng Y, Cao W*, Zuo Y, et al. Learning Thermoelectric Transport from Crystal Structures via Multiscale Graph Neural Network. *Phys. Rev. Appl.*, 2026, 26: 014019. CAS Q2, IF = 4.4.
- Zeng Y, Cao W*, Peng T, et al. A Machine Learning-Based Framework for Predicting the Power Factor of Thermoelectric Materials. *Appl. Mater. Today*, 2025, 43: 102627. CAS Q2, IF = 7.0.
- Zeng Y, Xie W, Cao W, et al. Accelerating Multi-Objective Collaborative Optimization of Doped Thermoelectric Materials via Artificial Intelligence. *arXiv preprint*, arXiv:2504.08258, 2025. Preprint.

Relevant Coursework

Mathematics & Physics	Probability and Mathematical Statistics (93), Complex Analysis and Integral Transforms (96), Numerical Methods (94), Information Theory and Coding (78), Electromagnetic Field Theory (96)
Information & Communication	Signals and Systems (96), Digital Signal Processing (91), Principles of Communications (92)
Machine Learning & AI	Machine Learning (A), Machine Learning in Vision (A+), Machine Learning: Theory and Practice (A), Big Data and Machine Learning for Renewable Energy (A)
Computer Programming	C Programming (99), Data Structures and Algorithms (95), Software Engineering (87)
Electronic Control	Digital Electronics (90), Analog Electronics (89), FPGA Principles and Applications (93), Embedded Systems and Applications (85)

Projects

- **TECSA-GNN: Learning Thermoelectric Transport with a Multiscale Graph Neural Network** [GitHub](#)
Built a multiscale graph neural network that learns thermoelectric transport properties directly from crystal structures, combining local atomic environments with global structural descriptors to predict electronic transport coefficients.
- **mPAP-Pred: Noninvasive Mean Pulmonary Arterial Pressure Prediction** [GitHub](#)
Developed a machine-learning pipeline for noninvasive mean pulmonary arterial pressure (mPAP) prediction, integrating multimodal clinical and imaging-derived features with SISSO, XGBoost, and TabNet, cross-validation, and interpretability analysis.
- **TE-PF-Prediction: Thermoelectric Power Factor Prediction** [GitHub](#)
Built a materials-descriptor-based framework for thermoelectric power factor prediction, reproducing the data preprocessing, model training, and performance evaluation workflow reported in *Appl. Mater. Today*, 2025, 43: 102627.
- **LTC-modeling: Interpretable Deep Learning for Lattice Thermal Conductivity** [GitHub](#)
Developed a data-driven model for lattice thermal conductivity prediction, using Kolmogorov-Arnold Networks (KANs) to learn interpretable nonlinear representations of structure-to-property relationships in crystalline materials.
- **OFDR Deskew Filter Simulation and GUI** [GitHub](#)
Developed a MATLAB-based optical frequency-domain reflectometry (OFDR) deskew-filter simulator and GUI for fiber-optic sensing and signal-processing research in my undergraduate thesis.

Academic Membership & Service

Membership

Oct. 2024	Chinese Society of Optimization, Overall Planning and Economic Mathematics / Student Member
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Peer Review

Aug. 2025	Appl. Therm. Eng. / Co-reviewer
Feb. 2026	Mater. Today Commun. / Co-reviewer
Feb. 2026	Inf. Process. Agric. / Reviewer
Mar. 2026	IEEE J. Sel. Top. Appl. Earth Obs. Remote Sens. / Reviewer
Jun. 2026	Adv. Intell. Syst. / Reviewer

Honors & Awards

2025	ASML Scholarship, School of Integrated Circuits, Wuhan University
2023	Outstanding Bachelor's Thesis, Wuhan University of Technology
2021-2022	Outstanding Student (School level); Third-Class Scholarship, Wuhan University of Technology
2020-2021	Outstanding Student (University level); Second-Class Scholarship, Wuhan University of Technology
2019-2020	Outstanding Student (School level); Second-Class Scholarship, Wuhan University of Technology
2021	Third Prize (Undergraduate Group), 11th MathorCup University Mathematical Modeling Challenge