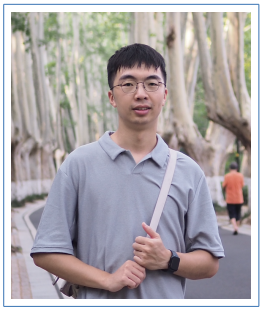
Liangliang Zhuang



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Education

2022.9–2025.6 **Ph.D. in Statistics**, Zhejiang Gongshang University
- Supervisor: Prof. Ancha Xu

2024.1–2025.1 **Visiting Ph.D. Student**, National University of Singapore
- Supervisors: Prof. Loon Ching Tang and Prof. Zhisheng Ye

Research Experience

2025.8–present **Postdoctoral Research Fellow**, Nanjing University of Science and Technology
- Supervisor: Prof. Yizhong Ma

2021.7–2022.1 **Research Assistant**, Hong Kong Polytechnic University
- Supervisor: Prof. Xiaolin Wang

Research Interests

Reliability statistics; Degradation modeling; Bayesian inference; Predictive maintenance; Sequential experimental design

Selected Publications

- **Zhuang L**, Barbosa G*, Ye Z. Data-driven KNN modeling via optimized weighted distance learning, *Applied Soft Computing*, 2026: 115811.
- **Zhuang L**, Ma Y, Fang G, Xu A*. Modeling two-scale degradation with heterogeneity: A unified random-effects inverse Gaussian framework, *IISE Transactions*, 2026.
- **Zhuang L**, Ma Y, Wang J, Pan R, Xu A*. From statistical modeling to AI-integrated inverse Gaussian Process: A comprehensive review for prognostics and health management, *Engineering Management*, 2026, 13(1): 65-84.
- **Zhuang L.**, Xu A*, Fang G, et al. Multivariate reparameterized inverse Gaussian processes with common effects for degradation-based reliability prediction[J]. *Journal of Quality Technology*, 2025, 57(1): 51-67.
- Xu A, Fang G, **Zhuang L***, et al. A multivariate Student-t process model for dependent tail-weighted degradation data[J]. *IISE Transactions*, 2025, 57(9): 1071-1087.
- Xu A, Wang R, **Zhuang L***. Strategic integration of adaptive sampling and ensemble techniques in federated learning for aircraft engine remaining useful life prediction[J]. *Applied Soft Computing*, 2025, 175: 113067.
- **Zhuang L**, Xu A*, Wang Y, et al. Remaining useful life prediction for two-phase degradation model based on reparameterized inverse Gaussian process[J]. *European Journal of Operational Research*, 2024, 319(3): 877-890.
- **Zhuang L**, Xu A*, Wang X*. A prognostic driven predictive maintenance framework based on Bayesian deep learning[J]. *Reliability Engineering & System Safety*, 2023, 234: 109181.
- **Zhuang L**, Xu A*, Wang B, et al. Data analysis of progressive-stress accelerated life tests with group effects[J]. *Quality Technology & Quantitative Management*, 2023, 20(6): 763-783.

- **Zhuang L**, Xu A*, Pang J. Product reliability analysis based on heavily censored interval data with batch effects[J]. *Reliability Engineering & System Safety*, 2021, 212: 107622.

Books and Monographs

- Xu A., Tang Y., and **Zhuang L.** (2025). *Random Degradation Processes and Statistical Modeling* (in Chinese). Science Press.
- **Zhuang L.** and Zhao Z., translators (2024). *R Crash Course: A Quick Start to Statistical Analysis and Research Data Analysis* (Chinese translation). Publishing House of Electronics Industry.
- **Zhuang L.** et al. (2021). *R Markdown Guide* (in Chinese). Online book.

Working Papers

- Xu A, **Zhuang L*** (2026). Modeling Multivariate degradation with time-varying mean-variance dynamics for reliability assessment: a hierarchical Bayesian approach, *IISE Transactions*, under review.
- **Zhuang L**, Xu A* (2026). Online RUL prediction for monotone degradation systems under sensor degradation via recursive estimation, *Naval Research Logistics*, under review.
- **Zhuang L**, Xu A* (2026). Multi-phase degradation modeling: A review of model structures, statistical inference, and decision support, *Statistical Theory and Related Fields*, under review.
- **Zhuang L**, Xu A* (2026). Cost-aware sequential active learning for accelerated degradation test planning with degrading measurement systems, in preparation.

Funded Grants

- *China Postdoctoral Science Foundation* (No. 2026M794714), PI, Jul. 2026–Jun. 2028.
- *Xinmiao Talent Program of Zhejiang Province* (No. XMS2106049), PI, Nov. 2021–Nov. 2022.
- *Department of Education of Zhejiang Province* (No. Y202044238), PI, Jan. 2020–Jan. 2021.
- *National Natural Science Foundation of China (NSFC) General Program* (No. 72571246), Participant, Jan. 2026–Dec. 2029.
- *Key Program of the Natural Science Foundation of Zhejiang Province* (No. LZ24A010002), Jan. 2024–Dec. 2026.
- *Zhejiang Provincial Philosophy and Social Science Planning Project* (No. 22JCXK09YB), Aug. 2022–Jul. 2024.
- *General Project of the Zhejiang Provincial Philosophy and Social Science Planning Program* (No. 26HQZZ012YB), Jan. 2024–Dec. 2025.

Conference Awards

- *The 4th International Conference on System Reliability and Safety Engineering (SRSE)*, Best Student Paper Award, Dec. 2022.
- *The 6th National Doctoral Student Forum on Statistics*, Second Prize, Paper Competition, Chinese Association for Applied Statistics, Nov. 2022.
- *2023 Annual Conference of the Reliability Society, Operations Research Society of China*, Outstanding Paper Award, Dec. 2023.

Honors and Awards

- Selected for the National Postdoctoral Fellowship Program (No. GZC20260433), Jul. 2026.
- Outstanding Doctoral Dissertation, Zhejiang Gongshang University, Jun. 2026.

- Graduate Innovation and Practice Star Award, Yangtze River Delta Forum on Research Integrity and Academic Ethics, Oct. 2025.
- China Scholarship Council (CSC) Scholarship for Overseas Study, Jul. 2023.
- National Scholarship (twice; M.S., 2021; Ph.D., 2024); First-Class Academic Scholarship (five times).
- Outstanding Professional Master's Practice Achievement Award of Zhejiang Province, Jun. 2023.
- Outstanding Graduate of Zhejiang Province, May 2022; Former Deputy Secretary of the Youth League Committee, School of Mathematics and Physics, Wenzhou University.

Academic Services

- **Journal Reviewer**: IISE Transactions; Journal of Quality Technology; IEEE Transactions on Reliability; Reliability Engineering & System Safety; Computers & Industrial Engineering; Computers in Industry; Mechanical Systems and Signal Processing; Knowledge-Based Systems.

Academic Outreach

- Founder and administrator of a WeChat official account on statistical computing and programming, publishing over 300 original articles with more than 40,000 subscribers and 1.2 million cumulative views.
- Developed two online educational courses, *Data Visualization* and *Document Communication*, on Bilibili, attracting over 100,000 cumulative views.