

# Liangliang Zhuang

## Curriculum Vitae



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Homepage, Google Scholar, ResearchGate

### Education

- 2022–present **PhD. in Statistics**, GPA: 3.65/4, Zhejiang Gongshang University, Hangzhou, China
- Supervisors: Liping Zhu, and Ancha Xu, professor
  - Main courses: statistical learning theory; Bayesian analysis
- 2024.1–2025.1 **Visiting PhD. student**, National University of Singapore
- Supervisors: Loon Ching TANG, and Zhisheng Ye, professor

### Selected publications

- **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*, 2024 (early accepted).
- Xu A, Fang G, **Zhuang L\***, et al. A multivariate Student-t process model for dependent tail-weighted degradation data[J]. *IISE Transactions*, 2024 (early accepted).
- **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.

### Working Papers

- Xu A, Weng X, **Zhuang L\***. Strategic integration of adaptive sampling and ensemble techniques in federated learning for aircraft engine remaining useful life prediction, *Applied Soft Computing*, with editor.
- **Zhuang L**, Xu A\*. Online estimation and remaining useful life prediction considering sensor degradation using inverse Gaussian process, under preparation.

- **Zhuang L**, Xu A\*. Modeling performance degradation by two scales with inverse Gaussian processes, under preparation.
- **Zhuang L**, Xu A\*. A review of multivariate dependent degradation modeling methods, under preparation.

## Research Experiences

2021.7–2022.1 **Research assistance**, Hong Kong Polytechnic University

- Advisor: *Xiao-Lin Wang, Research Assistant Professor*
- Read related literature on maintenance; based on Bayesian deep learning, combine remaining useful lifetime prediction with preventive maintenance.

2019–present **Group member**, East China Normal University

- Advisor: *Yincai Tang, Professor*
- Learn Bayesian analysis and some approximate Bayesian methods and apply them to Spatio-temporal statistics; as a participant, cooperate with Huawei to build an application platform for reliability analysis.

2020–present **Knowledge sharer**, *Website online*

- Founded a WeChat official account, which has published over 300 original blogs, attracting 35,000 subscribers and achieving 1.2 million readings, ranking fourth in the R language category.
- Developed and launched two online training courses, “Data Visualization” and “Document Communication”, on Bilibili. These courses have collectively garnered over 20,000 views: [Data Visualization], [Document Communication].

## Awards and Achievements

- Excellent Paper at the Annual Conference of the Operations Research Society of China (Dec. 2023).
- Recipient of the National Scholarship Council Grant (Aug. 2023).
- Best Student Paper Award in the 4th International Conference on System Reliability and Safety Engineering (Dec. 2022).
- Second Prize of the 6th National Academic Forum for PhD Students in Statistics (Nov. 2022).
- National Scholarship for PhD Student (Nov. 2024).
- Outstanding Graduate of Zhejiang Province (Aug. 2021).
- National Scholarship for Graduate Student (Sep. 2021).

## Research Grants

- Analysis on the influencing factors of comprehensive competitiveness of Chinese cities, *National Innovation and Entrepreneurship Program*, 2018.01 - 2020.01, PI.
- Reliability analysis based on interval data with batch effects, *Foundation of Wenzhou University Graduate Innovation*, 2019.01-2020.01, PI.
- Statistical analysis of lifetime data with batch effects, *Foundation of Zhejiang Educational Committee of China*, 2020.06-2021.06, PI.
- Application innovation of reliability analysis, *Project the Research Foundation from Zhejiang New Miao Talents Program Fund*, 2021.07-2022.07, PI.