

# Panyi Dong

## Education

- 2022–Present **Ph.D. student, Actuarial and Risk Management Sciences**, *University of Illinois Urbana-Champaign*, Champaign, USA, Advisor: Professor Zhiyu Quan, PhD.
- 2020–2022 **M.S., Actuarial Science and Risk Management**, *University of Illinois Urbana-Champaign*, Champaign, USA.
- 2016–2020 **B.S., Physics**, *Zhejiang University*, Hangzhou, China.

## Research Interest

Actuarial Science, Machine Learning (ML), Algorithmic Bias and Fairness, Interpretable AI, Privacy-preserving ML, Federated Learning (FL), Automated Machine Learning (AutoML)

## Professional Experience

- 2022–Present **Graduate Supervisor**, *University of Illinois Urbana-Champaign*, Illinois Risk Lab, USA.
- 2022–Present **Graduate Research/Teaching Assistant**, *University of Illinois Urbana-Champaign*, Department of Actuarial and Risk Management Sciences, USA.
- 2021 **Intern**, *AIA Life Insurance Company Limited*, Reporting Team, Shanghai, China.

## Publications

### Refereed Journal Articles

- 2025 **Panyi Dong**, Zhiyu Quan. (2025). Automated Machine Learning (AutoML) in Insurance. *Insurance: Mathematics and Economics*, 120, 17-41. <https://www.sciencedirect.com/science/article/pii/S0167668724001057>
- 2025 Zhiyu Quan, Changyue Hu, **Panyi Dong**, Emiliano A. Valdez. (2025). Improving Business Insurance Loss Models by Leveraging InsurTech Innovation. *North American Actuarial Journal*, 29(2), 247-274, <https://www.tandfonline.com/doi/full/10.1080/10920277.2024.2400648?af=R>

### Working Manuscripts

- 2025 **Panyi Dong**, Zhiyu Quan. InsurTech innovation using natural language processing. *Under review*. <https://arxiv.org/abs/2507.21112>
- 2025 **Panyi Dong**, Zhiyu Quan, Runhuan Feng, Tianyang Wang. Bridging the Divide While Walking a Tightrope: Evidence from the Insurance Industry on Data Privacy and Utility. *In preparation*. <https://arxiv.org/abs/2402.14983>
- 2025 **Panyi Dong**, Zhiyu Quan. Hybrid Tree-based Interpretable Pricing. *In preparation*.

### Professional Publications

- 2024 **Panyi Dong**, Runhuan Feng, Zhiyu Quan, Tianyang Wang. Federated Learning for Insurance Companies. *Society of Actuaries Research Institute*, <https://www.soa.org/resources/research-reports/2024/federated-learning-insurance-companies/>

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## Awards & Honors

- 2025 **SOA James C. Hickman Scholar Doctoral Stipend**, *Society of Actuaries*.  
2024 & 2025 **PARM Summer Research Fellows**, *University of Illinois Urbana-Champaign*.  
2020 **Certificate of Chu Kochen Honor Program**, *Zhejiang University*.  
2016-2020 **Second-Class Scholarship for Elite Students in Basic Science**, *Zhejiang University*.

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## Presentations

- 2025 **Hybrid Tree-based Interpretable Pricing**, *60th Actuarial Research Conference (ARC)*, York University, Toronto, Canada, Jul. 29-Aug. 1, 2025.  
2024 **Automated Machine Learning (AutoML) in Insurance**, *27th International Congress on Insurance: Mathematics and Economics (IME)*, DePaul University, Chicago, USA, Jul. 8-11, 2024.  
2023 **Privacy-Preserving Collaborative Information Sharing Through Federated Learning**, *58th Actuarial Research Conference (ARC)*, Drake University, Des Moines, USA, Jul. 30-Aug. 2, 2023.  
**Privacy-Preserving Collaborative Information Sharing Through Federated Learning**, *National Center for Supercomputing Applications (NCSA) Student Conference*, University of Illinois Urbana-Champaign, Champaign, USA, Apr. 13, 2023.  
**Privacy-Preserving Collaborative Information Sharing Through Federated Learning**, *Probabilistic Safety Assessment and Management (PSAM) Topical Conference 2023*, University of Illinois Urbana-Champaign, Abstract accepted.  
2022 **Automated Machine Learning (AutoML) in Insurance**, *57th Actuarial Research Conference (ARC)*, University of Illinois Urbana-Champaign, Champaign, USA, Aug. 3-6, 2022.

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## Academic Services

### Peer Review

- 2025 Technological Forecasting and Social Change (IF: 12.9)  
2024 IEEE Transactions on Big Data (IF: 7.5)

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## Research Experience

- 2024-Present Zero Reduction for Imbalanced Datasets  
2024-Present Hybrid Tree Insurance Pricing  
[Graduate Supervisor, Illinois Risk Lab](#)  
2022 Insurance Privacy Preservation in Federated Learning Collaboration  
Fall 2022 Algorithm Bias and Explainable Artificial Intelligence (XAI)  
[Graduate Researcher, Illinois Risk Lab](#)  
Fall 2025 Model Governance and Ethics for GenAI Models  
2022 Enhance Insurance Models through Insurtech Innovations  
Fall 2021 Automated Machine Learning in Insurance

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## Teaching Experience

### Teaching Assistant, University of Illinois Urbana-Champaign

- Spring 2025 **ASRM 471 Life Contingencies I (SOA UEC FAM-L)**, *Course Development, Discussion Session, Office Hour*.  
**ASRM 539 Risk Analytics and Decision Making**, *Office Hour*.

- Fall 2024 **ASRM 471 Life Contingencies I (SOA UEC FAM-L)**, *Course Development, Discussion Session, Grading, Office Hour.*
- Spring 2024 **ASRM 471 Life Contingencies I**, *Course Development, Discussion Session, Grading, Office Hour.*
- ASRM 555 Advanced Predictive Analytics**, *Course Development, Office Hour.*
- Fall 2023 **ASRM 471 Life Contingencies I (SOA UEC FAM-L)**, *Course Development, Discussion Session, Grading, Office Hour.*
- ASRM 454 Generalized Linear Models**, *Grading.*
- ASRM 499 Deep Learning for Finance & Insurance**, *Grading.*
- Fall 2022 **ASRM 471 Life Contingencies I (SOA UEC FAM-L)**, *Course Development, Discussion Session, Grading, Office Hour.*
- MATH 563 Risk Modeling and Analysis**, *Course Development, Grading.*

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## Professional Exams

SOA (Society of Actuaries): Exam P, FM, IFM, LTAM, STAM, SRM (expected May 2025), VEE Mathematics Statistics. Towards ASA.