

Ruqi Bai

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EDUCATION

- Aug. 2019 – May 2025 **PhD of Engineering in Computer Engineering**
Purdue University, West Lafayette, Indiana
• *Area of Study:* Machine Learning and Artificial Intelligence
- Aug. 2012 – May 2016 **Bachelor's of Science in Electrical Engineering**
Nanjing University of Posts and Telecommunications, Nanjing, Jiangsu, China
• *Area of Study:* Applied Physics

PUBLICATIONS

- Present • **Ruqi Bai**, David Inouye, "FedLOR: Federated Domain Generalization via Local Overfitting and Re-fitting" Under review
- Present • **Ruqi Bai**, Saurabh Bagchi, David Inouye, "Benchmarking Algorithms for Federated Domain Generalization" Under review
- Present • Sean Kulinski, Zeyu Zhou, **Ruqi Bai**, Murat Kocaoglu, David Inouye, "Towards Characterizing Domain Counterfactuals for Invertible Latent Causal Models" Under review
- Sep. 2021 • **Ruqi Bai**, David Inouye, Saurabh Bagchi "Resilience to Multiple Attacks via Adversarially Trained MIMO Ensembles" Preprint
- Jun. 2020 • **Ruqi Bai**, Jinkyu Koo, Heron Teegarden, Michael Roth, Kevin Chan, David Inouye, Saurabh Bagchi "HAWKEYE: Adversarial Example Detection through Ensemble Detectors" ,*SPIE Defense and Commercial Sensing Symposium (SPIE)*, pp. 1–15, April 2021.

RESEARCH EXPERIENCE

- Jan. 2023 – Present **Machine Learning Teaching Assistant**
Advisor: Dr. David Inouye, West Lafayette, Indiana
• Theoretical proofs for counterfactual equivalence model learning via latent distributions alignment of data gathered from heterogeneous domains;
• ECE 50024 Machine Learning teaching assistant.
- Jan. 2022 – Jan. 2023 **Machine Learning Teaching Assistant**
Advisor: Dr. David Inouye, West Lafayette, Indiana
• FedLOR: Domain generalization algorithm in federated learning setting.
• Domain generalization in Federated Learning Benchmark; Standardized definition of client domain heterogeneity; Evaluating 11 algorithms on 5 representative datasets.
• ECE Machine learning robustness and security related courses design.
- Aug 2019 - Jan. 2022 **Machine Learning Research Assistant**
Advisor: Dr. David Inouye, Dr. Saurabh Bagchi, West Lafayette, Indiana
• Model training against adversarial attacks with multiple types of metric measure.
• Bayesian model ensemble as the defense against white-box adversarial attacks.

WORK EXPERIENCE

- May 2016 – Jul 2019 **Senior Site Reliability Engineer**
Baidu, Beijing, China
• Lead the designing and development of Baidu Phoenix Nest's system failure self diagnosis system.
• Assisted in building Baidu Phoenix Nest's (Also known as Fengchao) Large-Scale Tracing Infrastructure.
• Designed a framework as a solution for log tracing (including generating, transporting, collecting, matching, and analyzing)

SKILLS

Programming Languages and Frameworks Python, Pytorch, AzureML, C, LaTeX, Bash, Batch, Git, Numpy, Pandas, Scikit Learn, Keras, Scipy, Linux, Jupyter, WanDB

More Skills Leading and working within teams, strong mathematics background, statistics, data analysis, development using high-performance computing systems, Microsoft Office, product research and design