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Peixuan Zhang

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Education

Ph.D. Candidate, Industrial Engineering & Operations Research, *Pennsylvania State University, PA* 2020 – 2025
Master of Science, Statistics, *University of Minnesota, Twin Cities, MN* 2017 – 2020
Bachelor of Science, Mathematics, *Dalian University of Technology, China* 2013 – 2017

Publication

- **A Smoothed Augmented Lagrangian Framework For Convex Optimization with Nonsmooth Stochastic Constraints**. **Peixuan Zhang**, Uday V. Shanbhag. 2024 Winter Simulation Conference (**Accepted**).
- **A Smoothed Augmented Lagrangian Framework For Convex Optimization with Nonsmooth Constraints**. **Peixuan Zhang**, Uday V. Shanbhag, Ethan X. Fang. (Under Review).
- **ACOPF Transmission Switching Using Open-Source MINLP Solvers**. Pranav Jain, **Peixuan Zhang**, Devon Sigler, Bernard Knueven. 2024 IEEE PES General Meeting (PESGM2024). (**Accepted**)
- **Global Resolution of Chance-Constrained Optimization Problems: Minkowski Functionals and Monotone Inclusions**. **Peixuan Zhang**, Uday V. Shanbhag, Constantino M. Lagoa, Ibrahim Ekrem Bardakci. 2023 62nd IEEE Conference on Decision and Control (CDC).
- **Forecasting User Interests Through Topic Tag Predictions in Online Health Communities**. Amogh Subbakrishna Adishesha, Lily Jakielaszek, Fariha Azhar, **Peixuan Zhang**, Vasant Honavar, Fenglong Ma, Chandra Belani, Prasenjit Mitra, and Sharon Xiaolei Huang. IEEE Journal of Biomedical and Health Informatics (2023).
- **A New General Asymptotic Formula and Inequalities involving The Volume of The Unit Ball**. Dawei Lu, **Peixuan Zhang**. Journal of Number Theory 170 (2017): 302-314.
- **Global Resolution of Chance Constrained Optimization**. **Peixuan Zhang**, Uday V. Shanbhag, Constantino M. Lagoa. (In Progress)
- **A Smoothed Augmented Lagrangian Framework for weakly convex optimization with stochastic constaints**. **Peixuan Zhang**, Uday V. Shanbhag. (In Progress)

Work Experience

PhD Research Intern - Generative AI for Time Series Forecasting **June 2024 - Aug 2024**
AT&T Labs *Bothell, WA*

- Explored and analyzed over 40 generative AI models including **Generative Adversarial Network** (GAN), **Diffusion Models**, **Transformer**-based models, **Large Language Models** for Time Series Forecasting problems.
- Implemented Transformer-based models, RNN models, MLP models for AT&T traffic prediction tasks using Autogluon and Time Series Library in Python.
- Gained hands-on experience in coding and data analytics, utilizing Snowflake and Databricks for efficient data management and processing.

PhD Research Intern - Optimization for Renewable Energy **Jul 2023 - Aug 2023**
National Renewable Energy Laboratory *Golden, CO*

- Investigated Optimal Transmission Switching problems with the **AI, Learning & Intelligent Systems Group** at NREL.
- Built bench-marking models for Mixed Integer Nonlinear Problems in **Julia** with **HPC** system.
- Compared different MINLP solvers including BOMIN, COUENNE, SHOT, Juniper on instances from PGlib.

Skills

Tools and Languages	Python (Tensorflow, PyTorch), Matlab, R, SQL, LaTeX, C#, SQL, Julia, Github, Snowflake, Databricks.
Communication	English (Professional Proficiency), Chinese (Native).
Research & Classes	Stochastic optimization, Variational Inequalities, Stochastic Simulation, Machine Learning, Optimization & Algorithm design, Stochastic calculus, Linear/Nonlinear programming, Statistics and Probability theory, Time Series, Constraints Programming.