

YANJIE TONG

Atlanta, GA

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EDUCATION

Georgia Institute of Technology

Aug. 2024 – Now

Ph.D. in Computational Science and Engineering

Tsinghua University

Sep. 2020 – Jun. 2024

B.S. in Mathematics and Physics and B.Eng. in Energy and Power Engineering

GPA: 3.89/4.00 (Top 6/44)

Relevant Courses: Calculus (A); Linear Algebra (A-); Fundamentals of Physics (A); Numerical Analysis (A-); Mathematical Physics Equations (A); Probability and Stochastic Processes (A); Statistical Inference (A); Linear Regression Analysis (A); Multivariate Statistical Analysis (A-); Engineering Mechanics (A+); Fluid Mechanics (A); Fundamentals of Control Engineering (A-)

RESEARCH EXPERIENCES

A Parametric Reduced-order Model based on Tensor Decomposition for Unstructured Mesh Data

Jun. 2023 – Now

Advisor: Xingjian Wang, Associate Professor, Department of Energy and Power Engineering, Tsinghua University

- Proposed a scalable framework that enables tensor decomposition to extract spatial correlation and compactly represent physical fields, especially when training data come from unstructured meshes.

Region-optimal Gaussian Process (roGP) Surrogate Model via Dirichlet Process

Aug. 2023 – Jun. 2024

Advisor: Xingjian Wang & Chih-Li Sung, Assistant Professor, Department of Statistics and Probability, Michigan State University

- Proposed roGP emulator with proper parameterization and justification of Uncertainty Quantification, revealing underlying clustering structures via Variational Inference for Dirichlet Process mixture model.

Gaussian Process Subspace Prediction for Nonlinear Model Reduction

Sep. 2022 – Sep. 2023

Advisor: Xingjian Wang & Ruda Zhang, Assistant Professor, the Uncertainty Quantification Lab, University of Houston

- Compared reduced-order models and hyperreduction methods for nonlinear flow field problems, and applied Gaussian Process Subspace Regression to predict POD basis over the parameter space.

AWARDS

The Chinese Mathematics Competitions (CMC) Final, First Prize, National 3rd Place

2023

Scholarship of Academic Excellence, Tsinghua University

2021 & 2022

Alibaba Global Mathematics Competition, Finalist

2022

PROFESSIONAL EXPERIENCE

Harbin Electric Machinery Company Limited

Jun. 2023 – Jul. 2023

Summer Intern, New Product Engineering Department

- Constructed a Knowledge Graph Database based on Neo4j.
- Implemented algorithm for Inference-based Fault Detection and Diagnosis in Python.

EXTRACURRICULAR ACTIVITIES

Harvard Summit for Young Leaders in China (HSYLC)

Beijing, China

Chinese Seminar Leader

Aug. 2023

- Designed and delivered a week-long bilingual seminar on Data Science Thinking Mode and Power Engineering Applications.
- Instructed talented high school students in Capstone Projects concerning Data Science.

TECHNICAL SKILLS

Programming Language

C++, Python, R, Matlab, Java

Tool and Software

MySQL, Git, Linux, AutoCAD, SolidWorks, Ansys

Language

TOEFL 112 (Reading 30, Listening 30, Speaking 24, Writing 28), GRE 159 + 170 + 4.0