

Da Long

385-418-7953, dl932@cs.utah.edu, long-da.github.io

EDUCATION	<p>The University of Utah, Salt Lake City, Utah Ph.D. student in Computer Science, GPA: 3.88, Expected May 2026 • Advisor: Shandian Zhe</p> <p>The University of Arizona, Tucson, Arizona B.S. in Computer Science, B.S. in Mathematics, GPA: 4.0, Dec. 2020</p>
RESEARCH INTERESTS	<p>Probabilistic Learning: Bayesian Modeling, Uncertainty Quantification, Approximate Inference, Gaussian Process</p> <p>AI for Scientific Discovery: Surrogate Modeling, Physics Informed Machine Learning, Operator Learning, Equation Discovery</p>
SKILLS	<p>Technical: Python, Matlab, C, Java, Pytorch, Jax, LaTeX</p>
RESEARCH EXPERIENCE	<p>Gaussian Process for ODE/PDEs Discovery via Spike-and-Slab Priors</p> <ul style="list-style-type: none">• Succeeded in recovering underlying equations in noisy and sparse datasets using a probabilistic approach while state-of-the-art methods failed <p>Kernel Method for Operator Learning</p> <ul style="list-style-type: none">• Outperformed leading methods such as FNO and DeepONet in noisy and sparse datasets <p>Learning High-frequent and Multi-scale Solutions via Gaussian Process</p> <ul style="list-style-type: none">• Selected and learned high-frequent components through a spectral mixture kernel <p>Gaussian Process for Solving ODE/PDEs</p> <ul style="list-style-type: none">• Developed a Gaussian process framework to solve ODE/PDEs and quantified solution uncertainties through variational inference <p>Physics Informed Neural Networks for Learning High-frequent and Multi-scale Solutions</p> <ul style="list-style-type: none">• Enhanced physics informed neural networks (PINNs) with Fourier bases and achieved best accuracy compared to state-of-the-art methods
ACADEMIC SERVICES	<p>Conference Reviewer</p> <ul style="list-style-type: none">• AISTATS 2023, ICML 2022
TEACHING EXPERIENCE	<p>The University of Utah</p> <p>Teaching Mentorships</p> <ul style="list-style-type: none">• CS 6350 Machine Learning (Fall 2022)• CS 6190 Probabilistic Machine Learning (Spring 2023)
PUBLICATIONS	<ul style="list-style-type: none">• Long D., Wang Z., Krishnapriyan A., Kirby R., Zhe S., & Mahoney M. (2022). AutoIP: A United Framework to Integrate Physics into Gaussian Processes. In <i>International Conference on Machine Learning (ICML 2022)</i>.• Fang S., Cooley M., Long D., Li S., Kirby R., & Zhe S., Solving High Frequency and Multi-Scale PDEs with Gaussian Processes. In <i>International Conference on Learning Representations (ICLR 2024)</i>.
PAPERS IN SUBMISSION	<ul style="list-style-type: none">• Long D., Xing W., Krishnapriyan A., Kirby R., Zhe S., & Mahoney M., Equation Discovery with Bayesian Spike-and-Slab Priors and Efficient Kernels.• Long D., Mrvaljevic N., Zhe S., & Hosseini B., A Kernel Approach for PDE Discovery and Operator Learning.

- Cooley M., **Long D.**, Kirby R., & Zhe S., Fourier PINNs: From Strong Boundary Conditions to Adaptive Fourier Bases.