

# Da Long

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