

Shengtai Yao

✉ yaost@stanford.edu ✉ yaoshengtai01@163.com 🌐 yaoshengtai.github.io in Shengtai Yao

Research Interests

My research interests lie broadly in *Optimization* and *Machine Learning Theory*.

Education

Stanford University , California, United States <i>Ph.D. Operation Research, Management Science and Engineering</i>	<i>Incoming</i>
Johns Hopkins University , Maryland, United States <i>M.S.E. Applied Mathematics and Statistics</i>	<i>Dec 2025</i>
<ul style="list-style-type: none"> ◦ Thesis: <i>Any-Dimensional Invariant Universality</i> (Advised by Prof. Mateo Díaz) 	
Tsinghua University , Beijing, China <i>B.E. Mechanical Engineering (Elite Program)</i>	<i>Jun 2024</i>
<ul style="list-style-type: none"> ◦ Thesis: <i>Physics-Informed Neural Networks for Multi-Physics Coupling Computation and Inverse Analysis</i> (Advised by Prof. Qiang He) 	

Honors & Awards

AMS Prize for Outstanding Master's Research, Johns Hopkins University	<i>Apr 2026</i>
Outstanding Graduation Thesis (Top 5%), Tsinghua University	<i>Jun 2024</i>
Scholarship for Technological Innovation, Tsinghua University	<i>Nov 2023</i>
Scholarship for Academic Performance, Tsinghua University	<i>Dec 2020</i>

Publications

1. **S. Yao**, E. Levin, M. Díaz. *Any-Dimensional Invariant Universality*. Johns Hopkins University, 2025.
2. **S. Yao**, Y. Wu, R.H. Taylor, E.M. Boctor. *Boost Calibration for Dual-Arm Co-Robotic Ultrasound System*. 2025 IEEE International Ultrasonics Symposium (IUS). *Poster Presented*.
3. **S. Yao**, W. Huang, Y. Hu, Q. He. *Boundary Region Reinforcement Physics-Informed Neural Networks for solving Partial Differential Equations*. Journal of Engineering Applications of Artificial Intelligence (EAAI). *Under 2nd round review*.
4. **S. Yao**, H. Li, X. Hu, K. Hermann, K. Zhang, Y. Li, M. Li, *Identifying Traffic Risk Hotspots Using Spatial-temporal Network Kernel Density Estimation: A Novel Optimal Parameter Selection Method with Dual Dataset Validation*. Transportation Research Board (TRB) 103rd Annual Meeting. *Poster Presented*.