Curriculum Vitae – Tianzhi Li

Basic Information

Tianzhi Li
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Tianzhi received his B.Sc. in Mathematics, under the supervision of Prof. Donghua Shi, from Beijing Institute of Technology (BIT) in 2021. He is now a PhD student of Peking University. Also, from Dec. 2024, he has been a visting student under the supervision of Prof. François Gay-Balmaz at Nanyang Technological University (NTU) in Singapore.

His research interest lies at the intersection of (a) **geometric mechanics**, (b) **stochastic nonholonomic mechanics**, and (c) **physics-informed learning**.

Education

Nanyang Technological University Dec. 2024 - Present
Visiting Ph.D. student (Supervisor : Prof. François Gay-Balmaz)

Peking University Sept. 2021 - Present
Ph.D. student (Supervisor : Prof. Jinzhi Wang)

Beijing Institute of Technology Sept. 2017 - June 2021
Bachelor of Science (Supervisor : Prof. Donghua Shi)

Publications

- T. Li, François Gay-Balmaz*, Donghua Shi, and Jinzhi Wang, Variational Principle for Stochastic Nonholonomic Systems Part I : Continuous-Time Formulation. International Conference on Geometric Science of Information (**GSI 2025**), to appear, 2025.

- T. Li, François Gay-Balmaz*, Donghua Shi, and Jinzhi Wang, Variational Principle for Stochastic Nonholonomic Systems Part II : Stochastic Nonholonomic Integrator. International Conference on Geometric Science of Information (**GSI 2025**), to appear, 2025.

- T. Li and Jinzhi Wang*, Variational Unscented Kalman Filter on Matrix Lie Groups, **Automatica** (Regular Paper), 172 :111995, 2025. [PDF Link]

- T. Li, Rui Fu, and Jinzhi Wang*, Reduced Dynamics and Geometric Optimal Control of Nonequilibrium Thermodynamics : Gaussian Case, **Automatica** (Regular Paper), 164 :111626, 2024. [PDF Link]

- T. Li and Jinzhi Wang*, Multisymplectic Unscented Kalman Filter for Geometrically Exact Beams. In : Nielsen, F., Barbaresco, F. (eds) International Conference on Geometric Science of Information (**GSI 2023**). Lecture Notes in Computer Science 14072, pp. 60-68, Springer Verlag. [PDF Link]

- T. Li and Jinzhi Wang*, A Physics-Informed Gaussian Process Regression Algorithm for the Dynamics of the Planar Pendulum, 42nd IEEE Chinese Control Conference (**CCC 2023**), Tianjin, China, 2023, pp. 5163-5167. [PDF Link]

- T. Li and Jinzhi Wang*, A Structure-Preserving Learning Scheme on SO(3), 2024 43rd IEEE Chinese Control Conference (**CCC 2024**), Kunming, China, 2024, pp. 5149-5152. [PDF Link]

Presentations

- ◇ *Multisymplectic Unscented Kalman Filter for Geometrically Exact Beams* at the International Conference on Geometric Science of Information (GSI), Saint-Malo, France, September 2023.
- ◇ *Geometric Structures and Optimal Control of Gaussian Distributions* at Workshop on Multibody System Dynamics (Organized by Prof. Qiang Tian and Prof. Haiyan Hu), April 2024.
- ◇ *Stochastic Nonholonomic Variational Principle* at Geometric Mechanics Seminar (Organized by Prof. Donghua Shi), July 2024.

Honors and Awards

- PKU Presidential Doctoral Fellowship, Peking University, 2025-2026
- PKU-CoE Dean's Presidential Scholarship (First Prize), Peking University, 2024-2025
- Academic Excellence Award, Peking University, 2024, 2023
- Yuehua Luo Sholarship, Peking University, 2024
- Outstanding TA Award (1st rank among all candidates), Peking University, 2023