Tianyi (Tim) Li

Born **Jan. 1993** in **Harbin, China**
Ph.D. candidate, System Dynamics Group
Sloan School of Management, MIT

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Degrees

School of Earth and Space Science, School of Mathematical Sciences, Peking University, China

B.S., Geophysics, 2015

B.S., Applied Mathematics, 2015

Department of Geosciences, Princeton University, United States

M.A., Geophysics, 2017

Committee: Allan Rubin, Jeroen Tromp (Director of Princeton ICSE), Frederik Simons

Sloan School of Management, Massachusetts Institute of Technology, United States

M.S., Management Research, 2020

Ph.D., Management Science, expected 2021

Committee: Hazhir Rahmandad, John Sterman (Director of Sloan SD), Munther Dahleh (Director of MIT IDSS)

Positions

2014	Research Fellow, University of Tokyo, Japan
2015-2017	Research Assistant, Princeton University, USA
2017-2020	Research and Teaching Assistant, Massachusetts Institute of Technology, USA
2020	Visiting Scholar, Institute of Theoretical Physics, Chinese Academy of Science, China
2020	Guest Lecturer, School of Public Health, Sun Yat-sen University, China

Research

--System Dynamics --Management Optimization/Algorithms --Industrial Engineering --Network science --Control Theory --Graph Theory --Queueing Theory --Cryptography --Machine Learning

Math and physics trained, I am trying to contribute theoretical and algorithmic efforts to management, industrial and policy studies from a data-driven, network-oriented & dynamic-control perspective. I am interested in analyzing the underlying physics in social-economic processes, and more so in bringing them out through advanced math tools so as to guide real-world managerial practice as well as policy decision-making.

Publications

[06] Zhou, P., **Li, T.**, & Zhang, P. (2020). Phase transitions and optimal algorithms for semi-supervised classifications on graphs: From belief propagation to graph convolution network. *Physical Review Research, 2*(3), 033325.

[05] **Li, T.** (2020). Simulating the spread of epidemics in China on multi-layer transportation networks: Beyond COVID-19 in Wuhan. *EPL (Europhysics Letters)*, *130*(4), 48002.

[04] **Li, T.**, & Zhang, P. (2020). Self-falsifiable hierarchical detection of overlapping communities on social networks. *New Journal of Physics, 22*(3), 033014.

[03] **Li, T.** (2019). Does the existence of" talented outliers" help improve team performance? Modeling heterogeneous personalities in teamwork. *Journal of Industrial & Management Optimization*, *13*(5), 12-19.

[02] **Li, T.** (2019). An Effort to Reconcile Time-and Slip-Dependent Friction Evolution. *Journal of Geophysical Research: Solid Earth*, *124*(2), 1838-1851.

[01] **Li, T.,** & Rubin, A. M. (2017). A microscopic model of rate and state friction evolution. *Journal of Geophysical Research: Solid Earth*, *122*(8), 6431-6453.

Conferences & Pre-prints

[07] **Li, T.**, & Dahleh, M. (2020). Automation of Data Acquisition Strategies in Model Calibration for System Models: Sensor Placement, *ssrn*, http://dx.doi.org/10.2139/ssrn.3619653. (*2020 IC2S2)*

[08] **Li, T.** (2020). Structural Control Analysis of System Dynamics Models. *arXiv:2005.13179*. (*2020 ISDC*; under revision with *EJOR)*

[09] Li, C., **Li, T.**, Liu, Y., & Cappellaro, P. (2020). Effective routing design for remote entanglement generation on quantum networks. *arXiv, 2001.02204*. (under review with *npj QI)*

[10] **Li, T.**, Rahmandad, H., & Sterman, J. (2020). Improving Parameter Estimation of Epidemic Models: Likelihood Functions and Kalman Filtering. (in preparation)

Scientific Writings

Li, T., (2020). Scientific Talks on COVID-19 (I-V). *Beijing Documents* (北京纪事) [ISSN 1005-9075], August 2020 – December 2020.

Teaching

Teaching Assistant, Introduction to system dynamics for MBA

Teaching Assistant, Introduction to system dynamics for EMBA

Coach, Accenture-MIT Technology Leadership Trailblazers' Program

Teaching Assistant, 2020 ISDC Summer School

Academic Awards & Honors

2017-2020	Fellowship, Sloan School of Management, *Massachusetts Institute of Technology*
2015-2017	Fellowship, *Princeton University*
2015	Undergraduate Speaker on the Graduation Ceremony (院本科生毕业代表), School of Earth and Space Sciences, *Peking University*
2015	Merit Student, *Beijing* (北京市三好学生)
2015	Outstanding Undergraduate, *Peking University*
2015	Lv Lin Scholarship
2014	Daiwa Security Scholarship
2013, 2014	National Scholarship of China (国家奖学金), Outstanding Awardee
2013, 2014	Outstanding Student, *Peking University*
2012	Panasonic Scholarship
2011	Merit Student, *Heilongjiang Province* (黑龙江省三好学生)

Skills & Non-academic Activities

Science Columnist		*Beijing Document*（《北京纪事》）, ISSN 1005-9075, August 2020 -
Language		Chinese (native), English (fluent), French (~DELF B2)
Coding		Python, Matlab
Sports	Kickboxing	President, MIT Kickboxing club, 2018-2019
		Winner of PKU-THU Kickboxing Combat (70 kg), 2015
	Marathon	Champion of Boston 5k Charityc Run, 2019
		Finisher (1'26'57"), Cambridge Half Marathon, 2019
	Fitness	Fitness Coach of Senior Grade, CBBA
		Certified Personal Trainer, IFBB
		PKU Plank Champion, 2017
	Basketball	Captain, Princeton Chinese basketball team, 2016-2017