

Research Interests	Theory and application of statistical machine learning, with a particular focus on developing novel methods for interactive machine learning and structured machine learning.	
Work History	Latitude AI Position: Principal Scientist	<i>February 2023 - Present</i>
	California Institute of Technology Position: Professor (May 2020 - Present) Previously: Assistant Professor (September 2014 - May 2020)	<i>September 2014 - Present</i>
	Argo AI Position: Principal Scientist	<i>January 2022 - February 2023</i>
	Disney Research Position: Research Scientist	<i>August 2013 - August 2014</i>
	Carnegie Mellon University Position: Postdoctoral Researcher Supervisors: Carlos Guestrin and Ramayya Krishnan	<i>September 2010 - August 2013</i>
	Cornell University Position: Research Assistant Supervisors: Thorsten Joachims and Robert Kleinberg	<i>May 2006 - August 2010</i>
	Google Position: Search Quality Analyst Intern Supervisor: Rajan Patel	<i>June 2009 - September 2009</i>
	Microsoft Research Position: Research Intern Supervisor: Christopher Burges	<i>May 2007 - August 2007</i>
Education	Cornell University Ph.D. in Computer Science Graduate Minor in Statistics Dissertation: New Learning Frameworks for Information Retrieval Thesis Committee: Thorsten Joachims (advisor), Robert Kleinberg, Christopher Burges, Ping Li, John Hopcroft	<i>Ph.D. January 2011</i>
	University of Illinois at Urbana-Champaign Bachelor of Science in Computer Science Graduated with Highest Honors (Summa Cum Laude)	<i>B.S. June 2005</i>
	Illinois Math and Science Academy	<i>1998 - 2001</i>

**Selected
Honors and
Awards**

Okawa Foundation Grant Recipient, 2018
Best Reviewer, ICLR 2018
Best Paper Award, ICRA 2020, ML4H 2021
Best Student Paper Award, CVPR 2021
Best Paper Nomination, WSDM 2011, ICDM 2014, SSAC 2017, R-AL 2020
Microsoft Research Graduate Fellowship, 2008-2010

Advising

Postdocs Supervised

- Raul Astudillo, active
- Uriah Israel, active
- James Preiss, active
- Kamyar Azizzadenesheli, 2019-2020, Nvidia
- Yuxin Chen, 2017-2019, Faculty at University of Chicago
- Lu Gan, 2022-2023, Faculty at Georgia Tech
- Angie Liu, 2018-2021, Faculty at Johns Hopkins University
- Taehwan Kim, 2015-2017, Faculty at UNIST
- Ugo Rosolia, 2020-2021, Amazon
- Yanan Sui, 2016-2018, Faculty at Tsinghua University
- Romann Weber, 2015-2016, Disney Research
- Rose Yu, 2017-2018, Faculty at UC San Diego

Ph.D. Students Advised

- Geeling Chau, California Institute of Technology, active
- Alexander Farhang, California Institute of Technology, active
- Yujia Huang, California Institute of Technology, active
- Ivan Jimenez Rodriguez, California Institute of Technology, active
- Francesca-Zhoufan Li, California Institute of Technology, active
- Kejun (Amy) Li, California Institute of Technology, active
- Yiheng Lin, California Institute of Technology, active
- Hao Liu, California Institute of Technology, active
- Sabera Talukder, California Institute of Technology, active
- Guanzhi Wang, California Institute of Technology, active
- Xuefei (Julie) Wang, California Institute of Technology, active
- Fengze Xie, California Institute of Technology, active
- Jason Yang, California Institute of Technology, active
- Christopher Yeh, California Institute of Technology, active
- Hongkai Zheng, California Institute of Technology, active
- Jeremy Bernstein, California Institute of Technology, Ph.D. 2022, Postdoc at MIT
- Victor Dorobantu, California Institute of Technology, Ph.D. 2023, Postdoc at MIT
- Hoang Le, California Institute of Technology, Ph.D. 2019, Latitude AI
- Joseph Marino, California Institute of Technology, Ph.D. 2021, DeepMind

- Ellen Novoseller, California Institute of Technology, Ph.D. 2020, Army Research Laboratory
- Guanya Shi, California Institute of Technology, Ph.D. 2022, Faculty at CMU
- Jialin Song, California Institute of Technology, Ph.D. 2021, Nvidia
- Jennifer Sun, California Institute of Technology, Ph.D. 2023, Faculty at Cornell
- Cameron Voloshin, California Institute of Technology, Ph.D. 2023, Latitude AI
- Eric Zhan, California Institute of Technology, Ph.D. 2021, Latitude AI
- Stephan Zheng, California Institute of Technology, Ph.D. 2018, Salesforce AI

Teaching

Machine Learning & Data Mining. Core machine learning and data mining course offered to graduate students and advanced undergraduates. Taught at Caltech: Winter 2015, Winter 2016, Winter 2017, Winter 2018, Winter 2019, Winter 2020, Winter 2021, Winter 2024

Advanced Topics in Machine Learning. Advanced course on contemporary research topics in machine learning. Taught at Caltech: Spring 2016, Spring 2017, Spring 2018, Spring 2019, Spring 2020, Spring 2021, Spring 2022.

Projects in Machine Learning. Project-based course matching students to mentors on projects of mutual interest. Taught at Caltech: Fall 2016, Fall 2017, Winter 2018, Fall 2018, Winter 2019, Fall 2019, Winter 2020.

Tutorials

- “Neurosymbolic Programming.” co-taught with Swarat Chaudhuri and Jennifer Sun, July 2022.
- “Imitation Learning.” co-taught with Hoang M. Le, ICML 2018 Tutorial, Stockholm, Sweden, July 2018.
- “Practical Online Retrieval Evaluation.” co-taught with Filip Radlinski, SIGIR 2011 Tutorial, Beijing, China, July 2011.
- “Learning to Rank.” co-taught with Filip Radlinski, NESCAI 2008 Tutorial, Ithaca, NY, May 2008
- “An Introduction to Structured Output Learning Using Support Vector Machines.” Microsoft Research Web Learning Group, Redmond, WA, August 2007.

Selected Professional Activities

Organizing Committee

- Senior Program Chair, ICLR 2024
- Communications Chair, ICML 2023
- Fundraising Chair, AISTATS 2016

Selected Other Service

Neurosymbolic Programming Summer School, 2022

AI for Science Workshop, @Caltech, 2018, 2019

Southern California Machine Learning Symposium, @Caltech, November 2016

**Selected
Publications**

Yiheng Lin, James Preiss, Emile Anand, Yingying Li, Yisong Yue, Adam Wierman. (2023) “Online Adaptive Controller Selection in Time-Varying Systems: No-Regret via Contractive Perturbations.” *Neural Information Processing Systems (NeurIPS)*, 2023.

Michael O’Connell*, Guanya Shi*, Xichen Shi, Kamyar Azizzadenesheli, Anima Anandkumar, Yisong Yue, Soon-Jo Chung. (2022) “Neural-Fly Enables Rapid Learning for Agile Flight in Strong Winds.” *Science Robotics*, May 2022

Shreyansh Daftry, Neil Abcouwer, Tyler Del Sesto, Siddarth Venkatraman, Jialin Song, Lucas Igel, Amos Byon, Ugo Rosolia, Yisong Yue, Masahiro Ono. (2022) “MLNav: Learning to Safely Navigate on Martian Terrains.” *IEEE Robotics and Automation Letters (RA-L)*, May 2022

Ivan Dario Jimenez Rodriguez, Aaron D. Ames, Yisong Yue. (2022) “LyaNet: A Lyapunov Framework for Training Neural ODEs.” *International Conference on Machine Learning (ICML)*, July 2022.

Swarat Chaudhuri, Kevin Ellis, Oleksandr Polozov, Rishabh Singh, Armando Solar-Lezama and Yisong Yue (2021), “Neurosymbolic Programming”, *Foundations and Trends in Programming Languages: Vol. 7: No. 3*, pp 158-243.

Guanya Shi, Kamyar Azizzadenesheli, Michael O’Connell, Soon-Jo Chung, Yisong Yue. (2021) “Meta-Adaptive Nonlinear Control: Theory and Algorithms.” *Neural Information Processing Systems (NeurIPS)*, December 2021.

Angela Gao, Jorge Castellanos, Yisong Yue, Zachary Ross, Katherine Bouman. (2021) “DeepGEM: Generalized Expectation-Maximization for Blind Inversion.” *Neural Information Processing Systems (NeurIPS)*, December 2021.

Tianwei Yin, Zihui Wu, He Sun, Adrian V. Dalca, Yisong Yue, Katherine L. Bouman. (2021) “End-to-End Sequential Sampling and Reconstruction for MR Imaging.” *Machine Learning for Health (ML4H)*, December 2021.

Benjamin Rivire, Wolfgang Hoenig, Yisong Yue, Soon-Jo Chung. (2020) “GLAS: Global-to-Local Safe Autonomy Synthesis for Multi-Robot Motion Planning with End-to-End Learning.” *IEEE Robotics and Automation Letters*, June, 2020.

Jennifer J. Sun, Ann Kennedy, Eric Zhan, David J. Anderson, Yisong Yue, Pietro Perona. (2021) “Task Programming: Learning Data Efficient Behavior Representations.” *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2021.

Dimitar Ho, Hoang M. Le, John Doyle, Yisong Yue. (2021) “Online Robust Control of Nonlinear Systems with Large Uncertainty.” *International Conference on Artificial Intelligence and Statistics (AISTATS)*, April 2021.

Jeremy Bernstein, Arash Vahdat, Yisong Yue, Ming-Yu Liu. (2020) “On the distance between two neural networks and the stability of learning.” *Neural Information Processing Systems (NeurIPS)*, December, 2020.

Ameesh Shah, Eric Zhan, Jennifer J. Sun, Abhinav Verma, Yisong Yue, Swarat Chaudhuri. (2020) “Learning Differentiable Programs with Admissible Neural Heuristics.” *Neural Information Processing Systems (NeurIPS)*, December, 2020.

Maegan Tucker, Ellen Novoseller, Claudia Kann, Yanan Sui, Yisong Yue, Joel Burdick,

Aaron D. Ames. (2020) “Preference-Based Learning for Exoskeleton Gait Optimization.” In International Conference on Robotics and Automation (ICRA), May 2020.

Abhinav Verma, Hoang M. Le, Yisong Yue, Swarat Chaudhuri. (2019) “Imitation-Projected Programmatic Reinforcement Learning.” In Neural Information Processing Systems (NeurIPS), December 2019.

Hoang M. Le, Cameron Voloshin, Yisong Yue. (2019) “Batch Policy Learning under Constraints.” In International Conference on Machine Learning (ICML), June 2019.

Richard Cheng, Abhinav Verma, Gabor Orosz, Swarat Chaudhuri, Yisong Yue, Joel Burdick. (2019). “Control Regularization for Reduced Variance Reinforcement Learning Batch Policy Learning under Constraints.” In International Conference on Machine Learning (ICML), June 2019.

Guanya Shi, Xichen Shi, Michael O’Connell, Rose Yu, Kamyar Azizzadenesheli, Anima Anandkumar, Yisong Yue, Soon-Jo Chung. (2019) “Neural Lander: Stable Drone Landing Control using Learned Dynamics.” In International Conference on Robotics and Automation (ICRA), Canada, May 2019.

Jialin Song, Yuxin Chen, Yisong Yue. (2019) “A General Framework for Multi-fidelity Bayesian Optimization with Gaussian Processes.” In International Conference on Artificial Intelligence and Statistics (AISTATS), April 2019.

Joseph Marino, Milan Cvitkovic, Yisong Yue. (2018) “A General Method for Amortizing Variational Filtering.” In Neural Information Processes Systems (NeurIPS), December 2018.

Yanan Sui, Masrour Zoghi, Katja Hofmann, Yisong Yue. (2018) “Advancements in Dueling Bandits.” In International Joint Conference on Artificial Intelligence (IJCAI), Survey Track, July 2018.

Joseph Marino, Yisong Yue, Stephan Mandt. (2018) “Iterative Amortized Inference.” In International Conference on Machine Learning (ICML), July 2018.

Hoang M. Le, Nan Jiang, Alekh Agarwal, Miroslav Dudk, Yisong Yue, Hal Daume III. (2018) “Hierarchical Imitation and Reinforcement Learning.” In International Conference on Machine Learning (ICML), July 2018.

Yanan Sui, Vincent Zhuang, Joel Burdick, Yisong Yue. (2018) “Stagewise Safe Bayesian Optimization with Gaussian Processes.” In International Conference on Machine Learning (ICML), July 2018.

Yanan Sui, Vincent Zhuang, Joel Burdick, Yisong Yue. (2017) “Multi-dueling Bandits with Dependent Arms.” In Conference on Uncertainty in Artificial Intelligent (UAI), August 2017.

Sarah Taylor, Taehwan Kim, Yisong Yue, Moshe Mahler, James Krahe, Anastasio Garcia Rodriguez, Jessica Hodgins, Iain Matthews. (2017) “A Deep Learning Approach to Generalized Speech Animation.” In ACM Conference on Computer Graphics (SIGGRAPH), July 2017.

Yisong Yue, Carlos Guestrin. (2011) “Linear Submodular Bandits and their Application to Diversified Retrieval.” In Neural Information Processing Systems (NeurIPS), December, 2011.

Yisong Yue, Josef Broder, Robert Kleinberg, Thorsten Joachims. (2012) “The K -armed Dueling Bandits Problem.” *Journal of Computer and System Sciences (JCSS)*, Special Issue on Learning Theory, DOI:10.1016/j.jcss.2011.12.028, May, 2012.

Thorsten Joachims, Thomas Hofmann, Yisong Yue, Chun-Nam Yu. (2009) “Predicting Structured Objects with Support Vector Machines.” *Communications of the ACM (CACM)*, Research Highlight, 52(11), 97–104, November 2009.