

# Yash Chandak

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## Education

- 2022–2024 **Postdoctoral Researcher**, *Stanford University, USA*  
Advised by Prof. Emma Brunskill
- 2017–2022 **PhD, Computer Science**, *University of Massachusetts Amherst, USA*  
Advised by Prof. Philip S. Thomas, Autonomous Learning Lab.
- 2017–2020 **MS in Computer Science**, *University of Massachusetts Amherst, USA* **4.0/4.0**  
Advised by Prof. Philip S. Thomas, Autonomous Learning Lab.
- 2013–2017 **B.Tech, Computer Science & Engineering**, *VIT University, Chennai, India* **9.11/10**  
Advised by Prof. Nithya Darisini P.S.

## Awards & Honors

- 2022 Google Ph.D. Fellowship. (Declined)
- 2022 *RLDM*: Best Paper.
- 2021 Outstanding Reviewer for NeurIPS (8%) and Top Reviewer for ICML (10%).
- 2020 *AAAI*: Outstanding student paper honorable mention.
- 2020 Graduated with Distinction, MS in Computer Science.
- 2013 Played at the national level for the Basketball Federation of India (BFI).

## Internships

- May–Sept '22 **Google DeepMind, London**, under Diana Borsa, Mohammad Azar, and Prof. Remi Munos
- Jun–Aug '19 **Adobe Research, San Jose**, under Georgios Theodorou and Prof. Sridhar Mahadevan
- Jun–Aug '18 **Adobe Research, San Jose**, under Georgios Theodorou
- Jan–Jun '17 **Indian Institute of Technology Madras, India**, under Prof. Balaraman Ravindran
- Jun–Jul '16 **University of Technology Troyes, France**, under Prof. Babiga Birregah
- Feb–Mar '16 **Defence Research & Development Organisation (IRDE, DRDO)**, under Sh. Jai Prakash Singh
- Feb–May '15 **The Aspiring Researcher Challenge**, under Prof. James Davis, UCSC and Rajan Vaish, Stanford

## Teaching

- Fall '20 Teaching Assistant for CS 687: Reinforcement Learning, UMass.
- Fall '19 Guest Lecture *On Designing Reward Signals*, CS 687: Reinforcement Learning, UMass.
- Spring '18 Teaching Assistant for CS 240: Reasoning Under Uncertainty, UMass.
- Fall '17 Teaching Assistant for CS 383: Artificial Intelligence, UMass.

## Service

- Reviewer Journals: JMLR (2021–24), MLJ (2022–23), AIJ(2023).
- Conferences: ICML (2019–23), NeurIPS (2019–2023), ICLR (2022), TMLR (2022–23), CoLLAs (2022–23).

## Outreach and Mentorship

- Fall '20 – PhD mentor, in collaboration with Microsoft New England, for CS696DS.
- Spring '21 Guided 3 Master's students for the project on optimizing interventions in shared autonomy.
- Spring '20 PhD mentor, in collaboration with Microsoft New England, for CS696DS.

Guided 4 Master's students towards developing human-agent cooperative RL systems.

Spring '19 PhD mentor, in collaboration with Microsoft Research Montreal, for CS696DS.  
Guided 4 Master's students towards developing RL algorithms for text-based games.

## Invited Talks

- 2022 Safe Reinforcement Learning workshop at IJCAI.  
Topic: Going Beyond Expected Cost/Return Metrics and Stationarity Assumptions
- 2022 University of New Hampshire  
Topic: Reinforcement Learning for Non-stationary Environments

## Journal Publications

- Under review **Data-Efficient Policy Evaluation Through Behavior Policy Search**  
Josiah P. Hanna, **Yash Chandak**, Philip S. Thomas, Martha White, Peter Stone, Scott Niekum
- Frontiers 2022 **Scaling Graph Propagation Kernels for Predictive Learning**  
Priyesh Vijayan, **Yash Chandak**, Mitesh M Khapra, Srinivasan Parthasarathy, Balaraman Ravindran  
Frontiers in Big Data, section Data Mining and Management.
- UMass 2022 **Reinforcement Learning for Non-Stationary Problems**  
**Yash Chandak**  
Ph.D. Thesis, University of Massachusetts Amherst

## Conference Publications

- ICML **Representations and Exploration for Deep Reinforcement Learning using Singular Value Decomposition**  
2023 **Yash Chandak**, Shantanu Thakoor, Zhaohan Daniel Guo, Yunhao Tang, Remi Munos, Will Dabney, Diana Borsa  
International Conference on Machine Learning
- ICML **Understanding Self-Predictive Learning for Reinforcement Learning**  
2023 Yunhao Tang, Zhaohan Daniel Guo, Pierre Harvey Richemond, Bernardo Avila Pires, **Yash Chandak**, Remi Munos, Mark Rowland, Mohammad Gheshlaghi Azar, Charline Le Lan, Clare Lyle, Andras Gyorgy, Shantanu Thakoor, Will Dabney, Bilal Piot, Daniele Calandriello, Michal Valko  
International Conference on Machine Learning
- AISTATS **SSOPE: Asymptotically Unbiased Off-Policy Policy Evaluation when Reusing Old Data in Nonstationary Environments**  
2023 Vincent Liu, **Yash Chandak**, Philip S. Thomas, Martha White  
International Conference on Artificial Intelligence and Statistics
- NeurIPS **(Off) Policy Evaluation for Action-Dependent Non-stationary Environments**  
2022 **Yash Chandak**, Shiv Shankar, Nate Bastian, Bruno Castro da Silva, Emma Brunskill, Philip S. Thomas  
Neural Information Processing Systems.
- NeurIPS **Factored DRO: Factored Distributionally Robust Policies for Contextual Bandits**  
2022 Tong Mu, **Yash Chandak**, Tatsunori Hashimoto, Emma Brunskill  
Neural Information Processing Systems.
- AAAI **On Optimizing Interventions in Shared Autonomy**  
2022 Weihao Tan\*, David Koleczek\*, Siddhant Pradhan\*, Nicholas Perello, Vivek Chettiar, Nan Ma, Aaslesha Rajaram, Vishal Rohra, Soundararajan Srinivasan, H M Sajjad Hossain<sup>†</sup>, **Yash Chandak**<sup>†</sup>  
Association for the Advancement of Artificial Intelligence. \*Equal contribution, <sup>†</sup>Equal advising.
- NeurIPS **Universal Off-Policy Evaluation**  
2021 **Yash Chandak**, Scott Niekum, Bruno Castro da Silva, Erik Learned-Miller,

Emma Brunskill, Philip S. Thomas  
Neural Information Processing Systems.

- NeurIPS **SOPE: Spectrum of Off-Policy Estimators**  
2021 Christina Yuan, **Yash Chandak**, Stephen Giguere, Philip S. Thomas, Scott Niekum  
Neural Information Processing Systems.
- ICML **High Confidence Generalization for Reinforcement Learning**  
2021 James Kostas, **Yash Chandak**, Scott Jordan, Philip S. Thomas  
International Conference on Machine Learning.
- AAAI **High-Confidence Off-Policy (or Counterfactual) Variance Estimation**  
2021 **Yash Chandak**, Shiv Shankar, Philip S. Thomas  
Association for the Advancement of Artificial Intelligence.
- NeurIPS **Towards Safe Policy Improvement for Non-Stationary MDPs**  
2020 **Yash Chandak**, Scott Jordan, Georgios Theodorou, Martha White, Philip S. Thomas  
Neural Information Processing Systems.
- ICML **Optimizing for the Future in Non-Stationary MDPs**  
2020 **Yash Chandak**, Georgios Theodorou, Shiv Shankar, Martha White, Sridhar Mahadevan, Philip S. Thomas  
International Conference on Machine Learning.
- ICML **Evaluating the Performance of Reinforcement Learning Algorithms**  
2020 Scott Jordan, **Yash Chandak**, Daniel Cohen, Mengxue Zhang, Philip S. Thomas  
International Conference on Machine Learning.
- AAAI **Lifelong Learning with a Changing Action Set**  
2020 **Yash Chandak**, Georgios Theodorou, Chris Nota, Philip S. Thomas  
Association for the Advancement of Artificial Intelligence.
- AAAI **Reinforcement Learning When All Actions are Not Always Available**  
2020 **Yash Chandak**, Georgios Theodorou, Blossom Metevier, Philip S. Thomas  
Association for the Advancement of Artificial Intelligence.
- ICML **Learning Action Representations for Reinforcement Learning**  
2019 **Yash Chandak**, Georgios Theodorou, James Kostas, Scott Jordan, Philip S. Thomas  
International Conference on Machine Learning.

## Workshop Publications and Others

- OPT (NeurIPS) **Optimization using Parallel Gradient Evaluations on Multiple Parameters**  
2022 **Yash Chandak**, Shiv Shankar, Venkata Gandikota, Philip S. Thomas, Arya Mazumdar  
OPT workshop at Neural Information Processing Systems.
- RLDM **A Generalized Learning Rule for Asynchronous Coagent Networks**  
2022 James Kostas, Scott Jordan, **Yash Chandak**, Georgios Theodorou, Dhawal Gupta, Philip S. Thomas  
Multidisciplinary Conference on Reinforcement Learning and Decision Making.
- SafeRL (NeurIPS) **Behavior Policy Search for Risk Estimators in Reinforcement Learning**  
2021 Elita Lobo, **Yash Chandak**, Dharmashankar Subramanian, Josiah Hanna, Marek Petrik  
Workshop on Safe and Robust Control of Uncertain Systems at NeurIPS.
- HumanAI (ICML) **Intervention Aware Shared Autonomy**  
2021 Weihao Tan\*, David Koleczek\*, Siddhant Pradhan\*, Nicholas Perello, Vivek Chettiar, Nan Ma, Aaslesha Rajaram, Vishal Rohra, Soundararajan Srinivasan, H M Sajjad Hossain<sup>†</sup>, **Yash Chandak**<sup>†</sup>  
Human-AI Collaboration in Sequential Decision-Making, ICML. \*Equal contribution, <sup>†</sup>Equal advising.
- arXiv **Reinforcement Learning for Strategic Recommendations**  
2020 Georgios Theodorou, **Yash Chandak**, Philip S. Thomas, Frits de Nijs

Arxiv 2009.07346.

- RLDM **Improving Generalization over Large Action Sets**  
2019 **Yash Chandak**, Georgios Theocharous, James Kostas, Scott Jordan, Philip S. Thomas  
Multidisciplinary Conference on Reinforcement Learning and Decision Making.
- RLDM **Evaluating RL Algorithms Using Cumulative Distributions of Performance**  
2019 Scott Jordan, **Yash Chandak**, Mengxue Zhang, Daniel Cohen, Philip S. Thomas  
Multidisciplinary Conference on Reinforcement Learning and Decision Making.
- CL **Reinforcement Learning with a Dynamic Action Set**  
(NeurIPs) **Yash Chandak**, Georgios Theocharous, James Kostas, Philip Thomas  
2018 Continual Learning workshop at Neural Information Processing Systems.
- arXiv **Classical Policy Gradient: Preserving Bellman's Principle of Optimality**  
2018 Philip S. Thomas, Scott Jordan, **Yash Chandak**, Chris Nota, James Kostas  
Arxiv 1906.03063.
- STAR-AI **HOPF: Higher Order Propagation Framework for Deep Collective Classification**  
(IJCAI) Priyesh Vijayan, **Yash Chandak**, Mitesh M Khapra, Srinivasan Parthasarathy, Balaraman Ravindran  
2018 International Workshop on Statistical Relational AI, IJCAI.
- MLG **Fusion Graph Convolutional Networks**  
(KDD) Priyesh Vijayan, **Yash Chandak**, Mitesh M Khapra, Srinivasan Parthasarathy, Balaraman Ravindran  
2018 International Workshop on Machine Learning with Graphs, KDD.
- HCOMP **On Optimizing Human-Machine Task Assignments**  
(AAAI) Andreas Veit, Michael Wilber, Rajan Vaish, Serge Belongie, James Davis and **others**  
2015 AAAI Conference on Human Computation and Crowdsourcing, work-in-progress.