

RESEARCH INTERESTS

My research experience lies broadly in machine learning, encompassing topics such as Reinforcement Learning [1, 2, 8, 9], Adversarial Machine Learning [3, 4], Game Theory [10], and Transportation Systems [5, 6, 7]. I am specifically interested in developing learning algorithms that effectively utilize data from diverse sources.

EDUCATION

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| University of California Santa Barbara <ul style="list-style-type: none">• <i>PhD Candidate in Electrical and Computer Engineering</i>
Advisor: Prof. Ramtin Pedarsani | Santa Barbara, CA
Jun 2020 – Present
Expected Graduation Fall 2024 |
| University of California Santa Barbara <ul style="list-style-type: none">• <i>Master of Science in Electrical and Computer Engineering GPA: 4.00/4.00</i> | Santa Barbara, CA
Sep 2018 – Jun 2020 |
| Stony Brook University <ul style="list-style-type: none">• <i>Bachelor of Engineering in Electrical Engineering</i>
<i>Bachelor of Engineering in Applied Mathematics and Statistics GPA: 3.84/4.00</i> | Stony Brook, NY
Aug 2013 – Jun 2017 |

HONORS & AWARDS

- **Graduate Division Dissertation Fellowship (2024):** Awarded by the ECE department at UCSB.
- **Outstanding Teaching Assistant Award (2018,2021):** Awarded by the ECE department at UCSB.
- **Magna Cum Laude (2017):** Graduated Stony Brook University with an overall GPA of 3.84.
- **University Scholar (2013):** Enrolled into the 4-year scholar program at Stony Brook University.

REFEREED CONFERENCE & JOURNAL PUBLICATIONS

- [1] Woodrow Z. Wang*, Mark Beliaev*, Erdem Biyik*, Daniel A. Lazar, Ramtin Pedarsani, and Dorsa Sadigh. “Emergent Prosociality in Multi-Agent Games Through Gifting”. In: *30th International Joint Conference on Artificial Intelligence (IJCAI)*. Aug 2021. DOI: [10.24963/ijcai.2021/61](https://doi.org/10.24963/ijcai.2021/61).
- [2] Mark Beliaev*, Andy Shih*, Stefano Ermon, Dorsa Sadigh, and Ramtin Pedarsani. “Imitation Learning by Estimating Expertise of Demonstrators”. In: *39th International Conference on Machine Learning (ICML)*. July 2022. URL: <https://proceedings.mlr.press/v162/beliaev22a>.
- [3] Mark Beliaev, Payam Delgosha, Hamed Hassani, and Ramtin Pedarsani. “Efficient and Robust Classification for Sparse Attacks”. In: *2022 IEEE International Symposium on Information Theory (ISIT)*. June 2022, pp. 3150–3155. DOI: [10.1109/ISIT50566.2022.9834832](https://doi.org/10.1109/ISIT50566.2022.9834832).
- [4] Mark Beliaev, Payam Delgosha, Hamed Hassani, and Ramtin Pedarsani. “Efficient and Robust Classification for Sparse Attacks”. In: *IEEE Journal on Selected Areas in Information Theory* 5 (May 2024), pp. 261–272. DOI: [10.1109/JSait.2024.3397187](https://doi.org/10.1109/JSait.2024.3397187).
- [5] Mark Beliaev, Erdem Biyik, Daniel A. Lazar, Woodrow Z. Wang, Dorsa Sadigh, and Ramtin Pedarsani. “Incentivizing Routing Choices for Safe and Efficient Transportation in the Face of the COVID-19 Pandemic”. In: *12th ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS)*. May 2021. DOI: [10.1145/3450267.3450546](https://doi.org/10.1145/3450267.3450546).
- [6] Mark Beliaev, Negar Mehr, and Ramtin Pedarsani. “Congestion-aware Bi-modal Delivery Systems Utilizing Drones”. In: *2022 European Control Conference (ECC)*. July 2022, pp. 1944–1951. DOI: [10.23919/ECC5457.2022.9838052](https://doi.org/10.23919/ECC5457.2022.9838052).
- [7] Mark Beliaev, Negar Mehr, and Ramtin Pedarsani. “Congestion-Aware Bi-Modal Delivery Systems Utilizing Drones”. In: *Future Transportation* 3.1 (March 2023), pp. 329–348. ISSN: 2673-7590. DOI: [10.3390/futuretransp3010020](https://doi.org/10.3390/futuretransp3010020).

WORKSHOP PROCEEDINGS & PREPRINTS

- [8] Mark Beliaev*, Woodrow Z. Wang*, Daniel A. Lazar, Erdem Bıyık, Dorsa Sadigh, and Ramtin Pedarsani. “Emergent Correlated Equilibrium through Synchronized Exploration”. In: *RSS 2020 Workshop on Emergent Behaviors in Human-Robot Systems*. July 2020. URL: <https://iliad.stanford.edu/pdfs/publications/beliaev2020emergent.pdf>.
- [9] Mark Beliaev and Ramtin Pedarsani. *Inverse Reinforcement Learning by Estimating Expertise of Demonstrators*. Feb 2024. arXiv: [2402.01886](https://arxiv.org/abs/2402.01886) [[cs.LG](#)].
- [10] Mark Beliaev, Negar Mehr, and Ramtin Pedarsani. *Pricing for Multi-modal Pickup and Delivery Problems with Heterogeneous Users*. Mar 2023. arXiv: [2303.10253](https://arxiv.org/abs/2303.10253) [[eess.SY](#)].

INTERNSHIPS & WORK EXPERIENCE

- **TikTok** San Jose, CA
Machine Learning Engineer Intern *June 2024 – September 2024*
Contributed improvements to the recommendation model. Successfully completed an internship project investigating the performance of GPT-4o as a vision-language classifier, providing insightful and actionable results to the company, and drafting a workshop paper to be submitted for peer-review.
- **Stony Brook University** Stony Brook, NY
Intern at Experimental Neuro-Rehab Lab *Sep 2015 – April 2016*
Collaborated in an inter-disciplinary lab led by Prithvi Shah, PhD. Helped in general lab procedures, as well as building tools used for EMS stimulation.
- **Phihong** Bohemia, NY
Electrical Engineer Intern *Nov 2014 – May 2015*
Helped the Research & Design Lab with diagnosing PoE devices.

TEACHING EXPERIENCE

- **University of California Santa Barbara** Santa Barbara, CA
Teaching Assistant *2018-2022*
Taught courses in Machine Learning (ECE 194E, ECE 283), Advanced Probability Theory (ECE 235), Signal Processing (ECE 130B, ECE 160) and Circuits (ECE 10A)
- **University of California Santa Barbara** Santa Barbara, CA
Private Tutor *2018-2020*
Provided hourly tutoring to undergraduate students for the Campus Learning Assistance Services program.

TECHNICAL SKILLS

- **Computer Languages:** Python, Matlab, C++, SQL
- **Deep Learning Frameworks:** PyTorch, Tensorflow, OpenAI Gym, RLlib, Stable-Baselines, Pandas, NumPy