Leo Benac

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Education

Harvard University (Cross-registered at MIT) — ***PhD in Computer Science*** 2022 - May 2027
Research Focus: Reinforcement Learning — Advisor: Finale Doshi-Velez Cambridge, MA

- **Fellowship**: Yiming Zhang (Jump Trading) Graduate Fellowship in Artificial Intelligence: Inaugural recipient; awarded for exceptional research promise in Reinforcement Learning; full tuition and stipend funding.

Concordia University — ***Bachelor of Honors in Statistics and Computer Science*** 2018 - May 2022
GPA 4.27/4.30, Top 1% Montreal, QC

Work Experience

Waymo — ***Data Scientist Intern*** May - Sep 2026
Mountain View, CA

- Implemented and deployed an end-to-end evaluation framework from scratch for Waymo's AI agents.
- Built synthetic data generation pipelines, curated golden datasets, implemented LLM-as-a-Judge metrics, regression testing, and online evaluation pipelines.
- Enabled engineers to systematically identify agent failure modes and guide targeted improvements.

Voloridge Investment Management — ***Quantitative Researcher Intern*** May - Aug 2025
Jupiter, FL

- Project: Forecasting the covariance matrix of asset returns for each day
- Analyzed 30+ years of US equity data (8,000+ stocks), detecting vendor errors and uncovering trends to support investment decisions
- Developed volatility and correlation models using a Factor model; delivered 5 research presentations to portfolio managers

Schneider Electric — ***AI Research Scientist Intern*** June - Dec 2024
Andover, MA

- Developed a Python OpenAI Gym–compatible simulator for battery cell charge/discharge cycles
- Designed RL solutions (PPO, DQN, SAC) for cell balancing, outperforming baselines by 15%
- Developed a Reinforcement Learning (RL) agent to optimize battery energy storage systems (BESS) for improved charging/discharging efficiency and cost reduction within a microgrid.

Concordia University — ***Research Assistant in Reinforcement Learning*** May - Sept 2021
Montreal, QC

- Selected among 60+ undergraduate students to conduct research on Reinforcement Learning
- Implemented two Python algorithms for risk-averse multi-armed bandits in non-stationary settings, outperforming baselines by 10%

Concordia University — ***Research Assistant in Machine Learning*** May - Sept 2020
Montreal, QC

- Selected among 60+ undergraduate students to conduct research in Machine Learning
- Implemented in Python the Viterbi Algorithm to solve the problem of Part-of-Speech-Tagging in NLP

Research Papers

- **L. Benac**, A. Hüyük, F. Doshi-Velez, "Quantifying Potential Missingness in IRL," submitted to NeurIPS 2026. [PDF]
- A. Hüyük, J. Raedler, **L. Benac**, F. Doshi-Velez, "Strategically Linked Decisions in Long-Term Planning and Reinforcement Learning," accepted at RLC 2026.
- **L. Benac**, J. Raedler, Z. Ma, F. Doshi-Velez, "A Benchmark for Multi-Party Negotiation Games from Real Negotiation Data," submitted to NeurIPS 2026. [PDF]
- **L. Benac**, S. Parbhoo, F. Doshi-Velez, "Bayesian Inverse Transition Learning: Learning Dynamics from Near-Optimal Trajectories," accepted at AISTATS 2026. [PDF]
- I. Bovenzi, A. Carmel, M. Hu, R. Hurwitz, F. McBride, **L. Benac**, J. R. T. Ayala, F. Doshi-Velez, "Pruning the Path to Optimal Care: Identifying Systematically Suboptimal Medical Decision-Making with Inverse Reinforcement Learning," accepted at AMIA 2025.
- A. Sharma, **L. Benac**, F. Doshi-Velez, "Decision-Point Guided Safe Policy Improvement," accepted at AISTATS 2025. [PDF]
- **L. Benac**, F. Godin, "Risk-Averse Non-Stationary Multi-Armed Bandits," 2021. [PDF]

Skills

- **Programming**: Python, NumPy, Scikit-Learn, PyTorch, Pandas, Stable Baselines, Gym, LaTeX, Java, R, SQL, Git
- **Machine Learning**: Reinforcement Learning, Deep Learning, Statistics, PCA, Algorithm Development, NLP, Agentic AI
- **Languages**: English, French, Spanish (Elementary)

Teaching Experience

Harvard University — *TA for "Ethics in Data Science"* Jan - May 2026
Cambridge, MA

- Required course for Harvard's M.S. in Data Science program.
- Co-organized course content, lectures, and the Canvas course website.
- Facilitated in-class discussions and graded assignments.

Harvard University — *TA for "Inverse Reinforcement Learning"* Aug - Dec 2023
Cambridge, MA

- Co-organized course content and lectures, and supported students through weekly office hours.
- Supervised more than 50 students on multiple research projects.

Awards & Scholarships

- **2026 Yiming Zhang Graduate Fellowship in Artificial Intelligence**: Inaugural recipient; selected for exceptional research promise in Reinforcement Learning; covers tuition and salary for up to two years
- **2022 Eric O'Connor Mathematics Medal**: Awarded to the highest-GPA graduating student in Mathematics
- **2022 MASSA Grant**: $500 for outstanding students in Mathematics & Statistics
- **IVADO Fin-ML CREATE Undergraduate Research Scholarship**: $6,000 for high academic performance
- **2022 Arts & Science Scholar**: Awarded to the top 1% of students in Mathematics & Statistics
- **2021 Concordia Undergraduate Student Research Award**: $8,000 for high academic performance
- **T.S. Dwivedi S.N. Mishra Statistics Scholarship**: $500 for an outstanding Statistics student
- **Campaign for the New Millennium Scholarship – Faculty of Arts and Science**: $400
- **2021 Arts & Science Scholar**: Awarded to the top 1% of students in Mathematics & Statistics
- **2020 Arts & Science Scholar**: Awarded to the top 1% of students in Mathematics & Statistics
- **2020 Concordia Undergraduate Student Research Award**: $5,760 for high academic performance

Invited Talks

- Jump Trading AI Symposium 2026, NYC
- Center for Human-Driven AI Research and Methods (CHARM), Harvard
- RL at Harvard 2023 Workshop
- Interactive Learning with Implicit Human Feedback Workshop at ICML 2023
- "Could It Have Been Different?" Counterfactuals in Minds and Machines Workshop at ICML 2023

Interests

- Played high school and college basketball - reached the Arizona State Championship in 2015
- Serve as a Student Manager and Practice Player for the Harvard Women's Division I Basketball team (Ivy League 2025 Champions)
- Real Estate Investing