

Bassel El Mabsout

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 Boston, MA, USA

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 Google Scholar

EDUCATION

Ph.D. in Computer Science

2018 – Present

Boston University

Dissertation: “Tree Shaping, a solution to the expression problem showcased via a compiler for a programming language named Puler”

Advisor: Dr. [Advisor Name]

B.S. in Computer Science

2012 – 2015

American University of Beirut

RESEARCH INTERESTS

- Reinforcement Learning and Control Systems
- Safety-critical Controller Learning
- Multi-objective Optimization
- State Estimation and Computer Vision
- Programming Language Theory

PUBLICATIONS

Peer-Reviewed Journal Articles

Mabsout B., **Mysore S.**, Saenko K., Mancuso R. (2021)

“How to train your quadrotor: A framework for consistently smooth and responsive flight control via reinforcement learning”

ACM Transactions on Cyber-Physical Systems, 5(4)

DOI: [add DOI]

Conference Proceedings

Mabsout B., **Mysore S.**, Saenko K., Mancuso R. (2021)

“Regularizing Action Policies for Smooth Control with Reinforcement Learning”

International Conference on Robotics and Automation (ICRA)

DOI: [add DOI]

Mysore S., Mabsout B., Mancuso R., Saenko K. (2021)

“Honey. I Shrunk The Actor: A Case Study on Preserving Performance with Smaller Actors in Actor-Critic RL”

IEEE Conference on Games (CoG)

DOI: [add DOI]

RESEARCH EXPERIENCE

Graduate Research Assistant

2018 – Present

Boston University

- Developed novel reinforcement learning algorithms for quadrotor control
- Created frameworks for safety-critical controller learning
- Implemented state estimation using Gaussian splatting

Research Assistant

2016 – 2018

American University of Beirut

- Developed neural-swarm optimization algorithms
- Implemented decentralized swarm control systems

TEACHING EXPERIENCE

Course Instructor - CS 654

2023

Boston University

- Created and supervised projects for 24 students
- Mentored students in modeling and controlling AmazingBall System
- Developed curriculum focusing on minimizing sim2real gap

Research Mentor

2021 – Present

RISE Program: Mentored undergraduate researcher in gradient-based optimization

BU Spark: Supervised team of 5 students in quadrotor research project

Efficient RL: Guided graduate students in power-efficient reinforcement learning

GRANTS & AWARDS

SERVICE & LEADERSHIP

Peer Review

- Reviewer for ICRA, ROBOT, TJCA, EMSOFT, COG, DATE, ECRTS, RTSS

Academic Service

- [Add department/university service]

PROJECTS

Stochastic dynamics learning

BU/MIT

Achieving safer learned model-based control requires accurate models, given most real-world systems are stochastic, we built Generative Adversarial Networks which modeling the distribution of the system's trajectories – SOURCE

Honda Ridesharing

SAIL

In collaboration with BU's SAIL and Honda, we worked on privacy preserving (using MPC) preferential ride-sharing. My responsibilities included defining optimization constraints so users with similar preferences get pooled together

Seizure Prediction

Machine learning – CS542

A Kaggle competition project which accurately predicted seizure activity in epileptic patients. Utilizing machine learning techniques, we achieved the highest score with a significant margin (AUC score of 0.92) – PREPRINT

Finding a NASH- ϵ Equilibrium

Complexity Theory – CS535

This term paper simplifies an existing proof of the complexity class specifying the run-time of finding approximate Nash equilibria – PREPRINT

Haskell Blog

Personal Blog

I created a Haskell blog hosted on IPFS about programming language concepts such as automatic differentiation and dependently typed vector construction which garnered some interest and was featured on Haskell News

TECHNICAL SKILLS

Programming Languages: Haskell, Nix, Python, Java, C, Processing, (Java,Type)script, Coq, SQL, Bash, C++

Frameworks & Libraries: Tensorflow, Pytorch, Keras, Numpy, Scipy, Pandas, Spinning Up, Pybullet, Gurobi

Tools: Git, Nix, GNU utils, Makefiles, LaTeX