Zachary Hervieux-Moore

Profile

Applied scientist researching deep reinforcement learning and its applications. My goal is to expand the current methods to a larger class of settings and apply them to robotics problems.

Contact

Phone: (609) 608-0336
Email: ztjh@alumni.princeton.edu
Website: hervature.com

Skills

Programming:
Python, C++

Machine Learning Frameworks:
PyTorch, Jax, Pandas, scikit-learn

Software:
Git, LaTeX

Cloud: AWS - EC2, S3, IAM, PCluster

Languages:
English, Spanish, French

Education

Princeton University 2016-2021

- PhD, Operations Research and Financial Engineering
- Master's, Operations Research and Financial Engineering
- Thesis: Modern Reinforcement Learning Techniques to Deal with Large Action Spaces

Queen's University 2011-2016

- Bachelor of Science Engineering, Mathematics and Engineering, Systems and Robotics Option
- Bachelor of Arts, Economics
- Thesis: Region Tracking in a Sequence of Images

Experience

Amazon, Las Vegas, NV 2022-Present
Senior Applied Scientist
- —Lead a team of 8 scientists and engineers that develop reinforcement learning solutions across the whole company.
- —Created a deep reinforcement learning approach that achieves optimal bin-packing performance given the constraints of a robot.
- —Developed the optimization portion of a reinforcement learning approach to the core selection problem.
- —Built the internal infrastructure the team uses to train and deploy solutions.

Harvard University, Cambridge, MA 2021-2022
Postdoctoral Researcher
- —Worked with Francesca Dominici to develop a deep learning model to predict the amount of wildfire smoke for the USA everyday based on satellite imagery.
- —Worked with Natesh Pillai to develop a reinforcement learning approach to learn improved MCMC algorithms.

Correlation One, NYC, NY 2019-2021
Data Scientist
- —Developed and taught course material on the following topics: machine learning, deep learning, and reinforcement learning.
- —Was the head teaching assistant for 8 editions of the Data Science For All course with two editions being taught in Colombia & Brazil.
- —Regularly taught on all topics of the Data Science For All course to a total of 10k students. Was the lead instructor for two editions of their Amazon training course.

Stratyfy, NYC, NY 2018-2019
Data Scientist
- —Developed a novel discretisation algorithm that boosted our models' performance to match state of the art techniques.
- —Wrote technical and non technical case studies of our methodology that are used to pitch customers, investors, or published online.
- —Built internal tools written in Python to automate the process of transitioning customers to our machine learning platform.

Siemens Healthineers, Princeton, NJ Summer 2017
Business Program Intern
- —Responsible for the formulation and development of the underlying algorithm used in a scheduling application.
- —Programmed in Python using Pandas to manipulate the data and CPLEX to model and solve the optimization problem.
- —Researched deep learning and reinforcement learning to create a novel scheduling algorithm.

Altera (now Intel PSG), San Jose, CA 2014-2015
Software/Hardware Engineer Intern
- —Maintained and improved internal test infrastructure.
- —Regularly coded Perl firmware and Django web applications. Automated the deployment of infrastructure using Puppet.
- —Modernized the test infrastructure by upgrading the OS and refactoring code to utilize the latest stable release of various software packages.