MASON DUBOEF

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EDUCATION

University of Massachusets Amherst *Dec 2026 (expected)*
M.S. in Computer Science
GPA: 3.94/4.0
Relevant courses: Reinforcement Learning | AI Alignment | Machine Learning | Artificial Intelligence | Algorithms, Game Theory & Fairness | Cyber Effects | Linear Algebra

Rensselaer Polytechnic Institute (RPI) *June 2023*
B.S. in Computer Science (Concentration in AI & Data)
Relevant courses: Intro to AI (later mentored) | Economics & Computation | Intro to Network Science | Foundations of CS (Theory) | Intro to Algorithms | Data Structures | Multivariable Calculus & Matrix Algebra | Differential Equations | Operating Systems | Prog. Languages | Computability & Logic | Software Docu. & Design

RESEARCH INTERESTS

I am interested in reinforcement learning, alignment and complex real-world decision-making systems. I am particularly interested in multi-objective RL,

RESEARCH EXPERIENCE

Algorithmic Fair Allocation for Food Rescue *Sep 2025 - Dec 2025*
Supervisor: Prof. Yair Zick UMass Amherst

- As part of Fair and Explainable Decision Making (FED) lab
- Integer linear program, optimized routing of drivers from food donors (ex. restaurants, grocery stores) to receiving agencies (ex. food pantries)
- Produced fair and efficient allocation of food under changing dynamics and stochastic availability
- Dispatch solution for Rachel's Table, a food rescue delivering 50k meals per month in Western MA

Interpretable Prediction & Large-Scale Analysis of Judging in Boxing *Jan 2024 - Present*
Supervisors: Dr. Allan Svejstrup Nielsen and Prof. P.M Aronow (Yale) Jabbr

- Developed autonomous judging system for boxing with accuracy within the range of top-level judges
- Gradient descent & neural network mapped stats output by computer vision system onto judges' scores
- Evaluation of top judges and analysis of their stylistic differences
- Finalist in 2026 MIT Sloan Sports Analytics Conference Research Paper Competition

Stable Matching in OPRA Voting Platform *Sep 2022 - Jun 2023*
Supervisor: Prof. Lirong Xia RPI

- Back-end Django development on OPRA, an online preference reporting and aggregation system
- Added support for stable matching problems, including deployment of different matching algorithms

CONFERENCE PAPERS

M. duBoef, T. Romeas, M. Charbonneau, A. S. Nielsen, "Interpretable Prediction and Large-Scale Analysis of Judging in Professional Boxing" (to appear) in 2026 MIT Sloan Sports Analytics Conference

PROFESSIONAL EXPERIENCE

Jabbr - Research Intern *Jan 2024 - Present*
Reference: Dr. Allan Svejstrup Nielsen (CEO)

- ML-based research on judging in professional boxing
- See "Research Experience" section for details

Mammoth Media - Data Science Intern *Aug 2021 - Jan 2022*
References: Solene Schwartz (COO) and Zachary Chow (General Manager)

- Statistical analysis of TikTok ads, informing branded content creation & media buying strategy
- Automated production and delivery of performance dashboards for clients
- Media buying, personally managed 5-6 figure monthly spend for many notable brands

Meta - Data Challenge Finalist *Apr 2021 - Aug 2021*

- Four-month training program at Meta, mentored by Facebook data scientists and engineers
- SQL courses, final project on market viability of telenovelas for OTT streaming services

Luum.io - Software Engineering Intern *May 2020 - Aug 2020*
Reference: Sebastien Gouin-Davis (CEO)

- Android app design, testing and development for lighting control platform
- Created PHP-based cost estimation tool for online marketing and customer acquisition

PERSONAL PROJECTS

NYC Subway Challenge *Oct 2025 – Dec 2025*

- Hierarchical reinforcement learning system to find a route for the NYC Subway Challenge (a minimum spanning walk problem) using value iteration and between-ness clustering
- Algorithmically found near-optimal (fastest) routes though through all 472 NYC subway stations

Willow *Mar 2023 - Jun 2023*

- Working under Prof. Bram Van Heuveln (RPI)
- Expanded web app used to build and assign truth trees, enabling Davis-Putnam type logic problems

Have I Been Gerrymandered? *Sep 2022 – Dec 2022*

- An interactive online map indicating how gerrymandered individual congressional districts are
- Developed novel extension to efficiency gap, a measure of district fairness given electoral data

Dynamic Subway Tolling for Congestion Deterrence *Mar 2022 - Jun 2022*

- Devised optimal toll pricing to deter congestion and promote efficiency on NYC's 1 Line
- Used Nash equilibrium analysis and traffic simulation based on MTA data

Automatic Door Control *Jun 2021 - Aug 2021*
Reference: Dr. Mallory Gaspard (Project Lead)

- Android development and circuit design for accessibility project, enabling remote opening of doors

SKILLS

Languages	Python, C/C++, Java, Django, SQL, TypeScript, Kotlin, React.js, Prolog, Lisp, Haskell, & MIPS Assembly
Tools	TensorFlow, PyTorch, Sklearn, Pandas, Numpy, Git, Matplotlib, Jupyter Notebook, Gurobi, Postman, Gephi, LaTeX, Beautiful Soup & WordPress