

Quinn Brighton

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EDUCATION

Brown University

Providence, RI

Sc.B. Applied Mathematics–Computer Science · GPA: 3.8/4.0 · ACT: 36/36

Expected May 2027

Relevant coursework: Computer Vision, Computational Linguistics, Foundations of AI, Statistical Inference, Mathematical Econometrics, Operations Research, Data Structures & Algorithms, Computer Systems, Robotics (*in progress*)

EXPERIENCE

Data-Driven Sailing (datadrivensailing.com)

2025 – Present

Founder & Developer

Independent

- Built and operate a live statistical ranking and prediction platform for U.S. college (ICSA) and high school (ISSA) sailing, modeling 24,000+ sailors across 100,000+ races and 26 seasons.
- Designed a temporal Plackett–Luce ranking model (13.7M parameters, maximum likelihood with L2 skill-drift penalties) trained in PyTorch on GPU; ~70% pairwise accuracy on held-out regattas.
- Built an out-of-sample evaluation framework benchmarking against Elo and static baselines; found races within a regatta are correlated and added a fitted form/boat-effect model that fixed overconfident simulations.
- Run weekly Monte Carlo forecasts (5,000 simulations per regatta) plus a boat-speed significance analyzer and a fantasy league app.
- Own the full stack: Python scrapers into SQLite, static site generation, a Flask API, and Linux server ops, including resolving crawler-driven 503 outages.

Scituate Recreation Department

May 2025 – Present

Sailing Program Director

Scituate, MA

- Lead a team of 10 instructors; run hiring interviews and onboarding, and coordinate lesson plans, regattas, and logistics.

Satuit Boat Club

Jun 2021 – Aug 2024

Head Sailing Instructor (2022–24), Senior Sailing Instructor (2021)

Scituate, MA

- Managed a team of 5 instructors; taught introductory and racing classes for ages 6–16.

PROJECTS

Monocular Sailing Broadcast → 3D Boat Tracking (Computer Vision final project)

Apr – May 2026

- Designed and built the full pipeline (team of 3) that turns a YouTube race broadcast into per-frame camera pose and each boat's metric position and heading, with no calibration or GPS.
- Trained keypoint heads (mast tip, mast base, bow, stern) on frozen DINOv3 ViT features, feeding a least-squares solver that jointly fits camera intrinsics/extrinsics and boat poses with outlier rejection; solved 172/172 held-out frames at 3.88 px median reprojection error (target: 15 px).

AlphaZero Go Agent (Artificial Intelligence final project)

Apr – May 2025

- Implemented Monte Carlo Tree Search guided by a policy/value network trained from multiprocess self-play, using 8-fold board symmetries for data augmentation.

Additional ML Projects

2026

- Reimplemented LeWorldModel (JEPA world model) and LoRA from scratch in PyTorch; built a self-supervised video transformer on race footage and a VAE + Transformer generative audio model.

SKILLS

Languages: Python, Java, SQL **ML/Stats:** PyTorch, scikit-learn, NumPy, pandas, OpenCV, Monte Carlo simulation, maximum likelihood **Infra:** Flask, SQLite, Linux, Git, ffmpeg

LEADERSHIP & ACTIVITIES

Club Captain, Brown Club Sailing · Brown Sailing Team (1st place, Intercollegiate Offshore Regatta 2024 & 2025) · Club Squash Captain · Brown Outdoor Leadership Training Mentor