ARIN BARMAN

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EDUCATION

University of Michigan *Ann Arbor, MI*
BSE in Computer Science August 2026 - May 2028

- Relevant Coursework: Discrete Math, Data structures & Algorithms

Michigan State University *August 2025 - May 2026*
BSE in Computer Science

- Relevant Coursework: Information management & the Cloud, Ethics & Professional issues in Computer Science

PROJECTS

NFL Game Predictor | *Solo Project, Michigan Edge* 2026

- Engineered leakage-free pregame features from nflverse play-by-play (EPA, QB play, Elo, injuries, rest, weather), verified by tests
- Benchmarked 3 models in walk-forward validation; the best hit 65.5% on 1,954 holdout games (Elo 63.8%, Vegas 66.4%)
- Shipped a live Streamlit dashboard with per-game factor breakdowns, auto-refreshed 3x weekly with timestamped pre-kickoff picks

MLB Game Outcome Predictor | *Solo Project, Michigan Edge* 2026

- Built a leakage-safe prediction pipeline in Python using pybaseball and Retrosheet data, engineering rolling team-form, bullpen-fatigue, and starting-pitcher features validated by automated tests
- Trained and benchmarked four models, including Elo, logistic regression, XGBoost, and a PyTorch entity-embedding network, via walk-forward validation, reaching 57.8% held-out accuracy within the sport's ~55-58% ceiling
- Deployed the model as a FastAPI web service with a live prediction UI, containerized with Docker and deployed to Render

NBA Game Predictor | *Solo Project, Michigan Edge* 2026

- Built a scikit-learn model predicting winners, margins, and calibrated win probabilities from point-in-time, injury-adjusted features
- Hit 67.5% winner accuracy vs. a 55.2% home-team baseline on 1,225 unseen 2025-26 games via walk-forward validation
- Deployed an interactive Streamlit app with Docker, GitHub Actions CI, and automated weekly roster/schedule refreshes

Indie Game Development | *Lead Developer & Designer (Team Project)* 2024 - 2026

- Led programming and development across a portfolio of 7 indie games built collaboratively with a small team, overseeing core systems from concept to playable build
- Built and shipped Windows PC launchers for the games, managing the full pipeline from development through public release, resulting in 52 sales
- Programmed gameplay mechanics in Godot and Unity while modeling and texturing 3D assets in Blender, bridging engineering and art across the development pipeline

EXPERIENCE

Analyst *August 2026 - Present*
Michigan Edge (Sports Analytics Club) Ann Arbor, MI

- Built three independent game-outcome prediction models for the NFL, MLB, and NBA as solo club projects, each validated with walk-forward testing on held-out games
- Engineered leakage-free features from public play-by-play and box-score data (nflverse, pybaseball, Retrosheet) and benchmarked against Elo, Vegas, and home-team baselines
- Deployed each model as a live web app (Streamlit, FastAPI) using Docker, with automated data refreshes to keep predictions current

Crew member & Hospitality *April 2026 - August 2026*
Chipotle Troy, MI

- Prepared and served food to high-volume customer traffic while maintaining strict food safety and quality standards
- Maintained inventory levels to ensure proper restocking across all prep stations to minimize service disruptions
- Operated point-of-sale systems and settled customer grievances in a timely manner maintaining a highly efficient throughput

Lead Instructor *May 2024 - May 2025*
Mathnasium Troy, MI

- Provided one-on-one and small group instruction to K-12 students, tailoring explanations to individual learning styles and skill levels
- Assessed student progress and adjusted lesson plans to strengthen foundational math concepts and close knowledge gaps
- Communicated regularly with parents on student performance, providing benchmarks to foster a supportive learning environment and measurable improvement

TECHNICAL SKILLS

Languages: Python, C#, C/C++, Java, JavaScript, SQL
Frameworks & Tools: React, Node.js, Express, PyTorch, scikit-learn, FastAPI, MySQL, Docker, Git, Linux, AWS, Unity, Godot
Concepts: Data Structures & Algorithms, Object-Oriented Programming, REST APIs, Database Systems, AI/ML Basics