

Mira Behar

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EDUCATION

Vassar College, Poughkeepsie, NY Graduated May 2023
B.A. in Computer Science, GPA: 3.76/4.00
Relevant Coursework: Software Design and Implementation, Computer Organization, Theory of Computation, Compilers, Analysis of Algorithms, Computational Linguistics, Operating Systems, Artificial Intelligence, Applications of AI

SKILLS

Programming Languages: Python, Java, JavaScript, TypeScript, C, C#, OCaml, Common Lisp, Assembly
Web Technologies: HTML, CSS, React, Next.js, Node.js
Databases & APIs: SQL, JSON, ConnectRPC
Development Tools: Git, NumPy, SciPy, Playwright, SQL Server Management Studio (SSMS), Android Studio
World Languages: English (Native), Spanish (Advanced), Japanese (Intermediate), Ladino (Intermediate)

PROJECTS & RESEARCH

- Cryptocurrency Price Streamer | Independent Sept 2025
- Developed a full stack web application in **TypeScript** with **Next.js (React)** frontend and **Node.js** backend, providing real-time prices from the TradingView website
 - Implemented parallel streaming with **Playwright** and **ConnectRPC**, efficiently handling multiple clients and tickers with shared browser tabs, and a responsive UI displaying live prices and timestamps
- Chess Game with AI Opponent & Predictive Algorithms Research | Vassar College Apr – May 2023
- Developed virtual chess game in **Common Lisp** with an AI opponent using the Monte Carlo Tree Search (MCTS) algorithm to select moves through probabilistic game tree exploration and simulation-based evaluation
 - Implemented UCB1-based intelligent node selection balancing exploration and exploitation, backpropagation for statistical result aggregation, and state hashing for efficient tree search
 - Wrote a research paper benchmarking MCTS against minimax search with alpha-beta pruning, comparing runtime efficiency and strategic decision quality across multiple game scenarios
- AI Algorithms Implementation | Vassar College Sept – Dec 2023
- Studied research on STN (Simple Temporal Network) algorithms, used for ensuring consistency, managing real-time execution, and handling new constraints in AI models
 - Implemented the Morris 2014 DC-Checking and Dispatchability algorithms using **Cython**, used for reasoning about STNUs (STN with Uncertainty)
- OCaml Compiler | Vassar College Sept – Dec 2023
- Built a compiler in **OCaml** that supports OCaml expressions including loops, function definitions and calls, with optimizations including strength reduction, constant propagation and copy propagation
 - Developed additional procedures to parse, type check, optimize, generate x86 assembly, and execute input OCaml expressions
- “Frankenstein” Spoiler Detector & NLP Research | Vassar College Apr – May 2022
- Engineered and evaluated multiple binary classifier NLP models for sentence-level spoiler detection in Goodreads book reviews, exploring classical ML approaches as alternatives to neural network baselines
 - Conducted comparative analysis of NLTK Naive Bayes, Sklearn Multinomial Naive Bayes, and Linear SVC models, identifying trigram-based Multinomial NB as the optimal baseline
 - Created a hybrid “Frankenstein” model using **Python** with **SciPy** sparse matrices and **NumPy**, integrating n-gram text features with metadata through feature engineering techniques

PROFESSIONAL EXPERIENCE

Freelance Web & App Developer | Remote Feb 2025 – Present

- Built custom websites using **CSS**, **HTML**, and **JavaScript** code; improved dynamic websites by enhancing design, extending functionality, and integrating advanced third-party tools
- Created a Glide-based mobile learning app, leading all aspects of UI/UX design, data modeling and app logic; implemented complex data relationships, advanced features and custom user flows
- Provided technical consulting to clients, translating product requirements into functional solutions and delivering responsive, user-friendly web applications under short deadlines

Implementation Consultant, Fast Enterprises | Centennial, CO & Anchorage, AK July 2023 – Dec 2024

- Implemented and customized tax administration software for state government clients, developing back-end solutions in **C#** and **.NET** to meet complex business requirements
- Designed UI components for public-facing portals, improving user accessibility
- Wrote advanced **SQL** queries to support data integration and feature enhancements across internal systems
- Diagnosed and resolved complex technical issues, implementing solutions to ensure system reliability and uptime
- Collaborated with cross-functional teams to analyze requirements and deliver custom solutions

Research Intern, Forterra NW | Seattle, WA Jun 2019 – Aug 2019

- Conducted independent research on regional non-governmental organizations, identifying potential partnership opportunities to expand Forterra's network and promote community engagement
- Modeled online engagement trends using quantitative analysis and presented a formal report outlining strategies to expand outreach