Max Bader

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Education

University of California, Irvine **Expected: June 2027**

B.S. Computer Science *GPA:* 3.4

Relevant Coursework: Data Structures/Algorithms, Object-Oriented Programming, Computer Architecture, Artificial Intelligence, Discrete Math, Discrete Structures, Python Programming and Software Libraries, Linear Algebra, Statistics

Technical Skills

Languages: Python, Java, C++, HTML/CSS, JavaScript, SQL, R

Technologies/Frameworks:GitHub, JUnit, Visual Studio Code, React, React Native, NumPy, Tensorflow, Flask, MatplotLib, pandas, Node.js, Supabase, FastAPI, Keras

Experience

Algoverse **March 2025 – July 2025**

Artificial Intelligence Researcher *Remote*

- Co-developed CoVeGAT, a Python NLP/Graph ML pipeline that parses free-form claims & citations into SVO triplets (spaCy w/ negation tagging), scores support with GPT models, and classifies alignment via Graph Attention Networks.
- Curated a 1K balanced citation-alignment dataset (500 verified AVeriTeC claims + 500 single-edit perturbations: entity, numeric, temporal, causal); implemented Python scripts for automated generation to stress-test LLM factuality.
- Achieved 96% detection accuracy on adversarial fabrications with a lightweight CoVe-Kernel similarity baseline (MiniLM embeddings + RBF distance threshold); surfaced failure modes in fine-grained numeric & causal edits for calibration.

Boundary Remote Sensing Systems **May 2025 – Present**

Software & Artificial Intelligence Developer *Irvine, CA*

- Developed and optimized a lightweight multimodal foundation model by extending TinyLlama with vision encoders, supporting robust text-image understanding for geospatial workflows and domain-specific applications.
- Led benchmarking and training efforts for geoscience foundation models, applying a structured fine-tuning recipe (adapter warm-up - LoRA fine-tuning - RAG/tool-use integration) while optimizing raster tiling and georef tokenization. Results informed architecture selection, model robustness, and inference efficiency.

Code Ninjas **May 2022 – September 2024**

Coding Instructor & Camp Leader *Anaheim, CA*

- Delivered age-tiered, project-based coding instruction to students ages 5–14: led Scratch & Microsoft MakeCode Arcade builds; coached learners through Java mini-projects; and taught Python fundamentals into intermediate concepts.
- Boosted enrollment by 20% via outreach to 200+ parents across 10 schools; designed a multitude of camp lesson plans.

Projects

AskHer - Emotional Support App

- Built a production-ready full-stack app: React frontend + FastAPI services backed by Supabase (Auth, RLS) to deliver secure user profiles, community posting, and peer-support engagement features.
- Integrated Gemini API to provide an empathetic in-app conversational agent that delivers real-time encouragement, relapse-mitigation tips, and context-aware resource suggestions based on user history.
- Modeled relational schemas & designed versioned RESTful endpoints in Supabase for scalable, low-latency read/write of user interactions, chat messages, and community activity streams; instrumented for growth.

Zotify

- Developed a full-stack JavaScript/React web app with a Python API layer integrating the Spotify API to authenticate users, query artists/tracks/albums/playlists, normalize JSON responses, and render search results in real time.
- Designed and implemented a responsive, highly interactive UI (hooks, context state, conditional rendering, lazy-loaded album grids, hover detail cards) with RESTful data fetches to reduce latency and improve user engagement.

WakeUp

- Built an adaptive alarm clock that uses Q-learning to personalize wake-up timing & escalation strategies based on historical snooze/dismiss behavior and day-of-week patterns; policy updates in real time to minimize oversleep events.
- Engineered RL state space (weekday/weekend, sleep debt estimate, prior day compliance) & action set (volume ramp, puzzle unlock, delay interval); ϵ-greedy policy with decay to drive improvement in on-time wake up rate.