Jonathan Hu

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TECHNICAL SKILLS

Languages: TypeScript, JavaScript, Python, SQL, C/C++, Java, HTML5/CSS, R, MATLAB
Frameworks and Libraries: React, Next.js, Node.js, Tailwind CSS, Radix UI, Zustand, Immer, Zod, Flask, Pandas, NumPy, Matplotlib, Scikit-learn
Database Management: PostgreSQL, Drizzle ORM, Microsoft SQL Server, MySQL, MongoDB
Tools & Software: Git, GitHub, Docker, Prettier, Playwright, Postman, JMeter, AWS, Tableau, Power BI, Stata, MS Visual Studio

EXPERIENCE

Full Stack Software Engineer   May 2025 – Present
Matrices AI   *San Francisco, CA*
- Solely architected and delivered a production-grade reinforcement learning environment using **Next.js, React, TypeScript, and Zustand** to top AI Labs, owning end-to-end execution from system design through implementation and platform integration.
- Owned critical cross-product infrastructure that powers automated validation across all internal products/sites, built with **Zod schemas** and **worker-thread isolation**, detecting state regressions and preserving evaluation integrity for agent benchmarks
- Designed **PostgreSQL + Drizzle ORM data models and queries** and built an automated data-generation/seeding pipeline to produce large, diverse benchmark scenarios, **reducing task creation time by 75%**.
- Built an internal admin analytics dashboard leveraging **Next.js Route Handlers**, **Drizzle ORM + PostgreSQL** and **Linear API** integrations to unify creator and workstream reporting; added server-side rollups, filtering, and CSV export to **cut status-report generation time by 50%**..
- Led technical execution across full-stack and infrastructure efforts by mentoring engineers through weekly 1:1s, establishing integration standards and reusable patterns, and driving knowledge transfer to accelerate new infrastructure implementations and reduce integration issues.

Data Analyst   September 2021 – February 2023
Advocacy and Community-Based Trauma Studies (ACTS) Lab   *New York, NY*
- Built Python applications using **Pandas** and **NumPy** to automate and optimize data recording and spreadsheet management processes, significantly boosting efficiency and accuracy by 30%.
- Applied statistical and machine learning models using **Scikit-learn**, **TensorFlow**, and **Matplotlib** to analyze trauma-related interview data, improving treatment insights and increasing diagnostic accuracy.
- Engineered data pipelines to preprocess, clean and transform large datasets, ensuring consistency and reliability in analysis while reducing processing time.

Data Analyst Intern   September 2021 – May 2022
Lilo   *New York, NY*
- Designed and implemented user analytics programs using **Python**, enhancing the quality of insights, and improving user retention by 15%.
- Developed dynamic **Tableau** dashboards and **PowerBI** visualizations for leadership, streamlining decision-making processes and enabling data-driven strategies.

Graphics Designer and Social Media Manager   June 2020 – January 2021
PNDA LahiArts   *Sacramento, CA*
- Crafted and executed graphics using **Adobe Photoshop**, **Adobe Illustrator**, and **Canva** for social media campaigns, significantly improving audience engagement by 40% and promoting company-sponsored events to 5,000+ followers.

PROJECTS

Trello Clone   July 2025
- Built and shipped a production-grade Trello clone end-to-end, including drag-and-drop boards, card modals, checklists, custom fields, labels, and multi-board support using **React, Zustand** and **Next.js.**
- Implemented a full mock backend with Zustand operations, selectors, synced store and integration with platform session management, event logging, and JSON patch state tracking for agent evaluations.
- Designed responsive layouts and modular components with drag-and-drop, inline editing, and filters for search, labels, and due dates.
- Designed the state layer with Zustand selectors and memoized components to minimize re-renders and keep interactions responsive at scale.

GeoGrub   March 2025
- Created GeoGrub, a standalone **Python** application that leverages the **Google Places API** and geolocation services to dynamically search for restaurants based on user provided parameters.
- Designed a modular codebase using **QThread** and **Qt signals/slots** to handle asynchronous API calls, ensuring the UI remains responsive during data fetches and improving load times.
- Integrated external libraries (**geocoder, geopy, requests**) to perform geocoding and data retrieval, combining multiple services into a cohesive application workflow.

Court Finder: Basketball Court Review Website   December 2024
- Designed and deployed a **MSSQL** database to support key website functionalities, such as user-generated content, rating systems, and court details, enhancing the user experience with quick access to relevant court information.
- Collaborated with team members using the **MERN** stack, contributing to database integration with the backend and frontend to ensure correct and efficient queries were utilized for data retrieval.

EDUCATION

University of Colorado Boulder   December 2024
Bachelor of Science in Applied Computer Science
New York University   May 2022
Bachelor of Science in Applied Psychology, Minor in Computer Science
Relevant Coursework: *Datamining, Data Structures, Computer Systems, Data Science Algorithms, Database Design, Discrete Structures, Algorithms, Information Visualization, Software Development, Principles of Programming*