Nora (Yinuo) Cai

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EDUCATION

Brown University   Providence, RI
B.A. in Computer Science, B.A. in English | GPA: 4.0   *May 2025*
- **Relevant Coursework**: Data Structures/Algorithms, Object Oriented Design, Linear Algebra, Statistics, Computer Systems, Deep Learning, Computational Linguistics

University of Oxford, St Peter's College   Oxford, UK
B.S. in Chemistry | Honors: Bailey's Award & Domas Scholarship | GPA: 4.0   *Oct. 2020 – June 2022*

TECHNICAL SKILLS

Programming Languages: Python, Java, C, C++, SQL, HTML, CSS, JavaScript, TypeScript
Frameworks/Cloud Platforms: React, Node.js, Flask, FastAPI, JUnit, Git, Jira, Unix, Figma | Docker, AWS, Google Cloud
Libraries/Database Management: Pandas, Keras, TensorFlow, PyTorch| MySQL, MongoDB, PostgreSQL

RELEVANT EXPERIENCE

Software Engineer Intern   San Jose, CA
Innovation AI   *May – Aug. 2024*
- Engineered a cloud-deployed AI chatbot MVP using the ChatGPT model and LangChain to automate company's customer support workflows, reducing average query response times for 10,000+ users
- Designed and developed a full-stack web app with a React frontend (Tailwind UI) and Python Flask backend, implementing user authentication and PDF/JSON file parsing, and managing chat history management via Supabase Postgres DB
- Designed a RESTful API with PostgreSQL handling 5,000+ daily API calls and optimizing caching for faster data retrieval

Research Assistant   Providence, RI
Center for Technological Responsibility, Brown University   *Jan. 2024 – Present*
- Developed a Python data collection pipeline to scrape and process metadata from 1,600+ AI-related OpenStates bills, reducing data loading by 50% and pipeline runtime through optimized data storage
- Applied SQL for data integration and NLP (BERTopic/Gensim) to map 15 key topics for UMAP visualization, enhancing clarity for 20+ AI researchers & stakeholders, and winning *Audience Favorite* at the 2024 URA Research Symposium
- Designed a 100+ question scorecard to evaluate U.S. AI bills, improving accuracy by 25% through LLM-assisted (ChatGPT, Llama) bill text summarization, benchmarked against PluralPolicy standards

PROJECTS

MaestroNet | *Python, Tensorflow, Keras, Deep Learning*   *Feb. – May 2024*
- Developed MaestroNet, a deep learning model for transformer-based musical transcription, using Python and TensorFlow
- Trained the model on the Maestro dataset containing 172 hours music (6.18 millions notes) and expanded the dataset to 1,000+ audio/MIDI pairs, increasing the automated transcription accuracy from 70% to 90.8%
- Implemented 75+ unit and integration tests, increasing test coverage and ensuring a robust end-to-end framework

Database | *C, Concurrency & Multi-threading, Shell Scripting*   *Oct. – Dec. 2023*
- Developed a thread-safe database management system in C with fine-grained locking, reducing lock contention and optimizing read/write operations, supporting 100+ concurrent users over a network
- Implemented a server-side REPL for command handling (pausing, resuming, and database printing), improving command execution speed by 30% and ensuring consistent performance during peak server-client interactions

Noise | *Figma, HTML, CSS, JavaScript, React*   *Feb. 2023*
- Developed a dynamic wallpaper prototype to visualize and reduce screen time at Hack@Brown 2023
- Developed a full-stack web application using Flask to serve a REST API as the backend and React as the frontend, delivering a responsive UI within two days; attracted 50+ initial users with positive feedback on its functionality and design

LEADERSHIP EXPERIENCE

Executive Organizer   Providence, RI
Brown AI Safety Team (BAIST)   *June 2024 – Present*
- Led 2 AI Alignment and Deep Learning fellowship programs and a reading group, expanding participation from 30 to 100
- Invited to OASIS, a 3-day AI safety workshop at Berkeley, contributing to faculty outreach and alignment discussions