

Tong Cai

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SUMMARY

Skilled full stack engineer with experience leading mobile initiatives and developing robust backend systems, notably improving task management efficiency and data storage performance. Proven track record in designing scalable solutions and optimizing tech stack integrations. Aiming to leverage expertise in software development and automation to deliver high-impact projects in a dynamic work environment.

EDUCATION

- **Northeastern University** Boston, MA
Master of Science in Computer Science; GPA: 4.00 *Sep. 2023 – May 2026*
 - **Coursework:** Object-Oriented Design, Database, Algorithms, Data Structures, Web & Mobile Development
- **The Chinese University of Hong Kong, Shenzhen Campus** Shenzhen, China
Bachelor of Business Administration in Finance *Sep. 2019 – May 2023*

EXPERIENCES

- **ticker** Boston, MA
Full Stack Engineer *Jan 2025 – Aug 2025*
 - **Leadership & Team Enablement:** Led mobile initiatives and mentored 5 junior developers through weekly tech meetings and 1:1 sessions. Created SOPs and weekly development plans, and coordinated with PMs to align priorities. Designed and implemented a ticket management system that improved task allocation and reduced assignment time by 50%.
 - **Scalable System Design & Backend Development:** Architected modular backend systems using Spring Boot, MongoDB, and Redis, following a layered architecture (Controller–Service–Repository). Built robust features including onboarding workflows, follow-relation logic, token-based JWT authentication, and notification infrastructure. Designed scalable data models that reduced storage by over 90% and improved query performance.
 - **Frontend Engineering & Optimization:** Developed and styled cross-platform mobile interfaces using React Native, global styles, and shared type definitions. Standardized design with modular components to ensure consistent UI/UX and seamless integration. Leveraged AsyncStorage to reduce redundant API calls by 40%, improving screen load time.
 - **Testing, CI/CD & Containerization:** Built and deployed Dockerized backend services on GCP, ensuring environment consistency across development and production. Wrote unit tests using JUnit and Mockito, integrated Node.js modules where needed, and enforced code quality through rigorous GitHub reviews. Maintained a centralized documentation wiki to support onboarding and long-term maintainability.
 - **Agile Workflow Optimization:** Enhanced project management by implementing GitHub reviewer rules, Jira story points, and deadlines to improve sprint planning, workload distribution, and delivery predictability.

PROJECTS

- **Wordle Game (Website) – React.js, Spring Boot, AWS, Docker, Redis, Git** Boston, MA
Northeastern University *Dec 2023 – Jan 2024*
 - **Full-Stack Architecture & Deployment:** Developed a full-stack Wordle game with a TypeScript-based React frontend (Vite) and a Spring Boot backend, deployed via Docker on AWS EC2.
 - **Authentication and Security:** Implemented user authentication and session handling with JWT tokens to support secure, stateless API interactions. Integrated Redis for caching and token storage.
 - **Interactive Game Logic:** Designed dynamic game logic using React functional components and hooks, enabling responsive state management and real-time keyboard event listeners for seamless gameplay. Structured a JSON-based vocabulary dataset to power game solutions and guesses, allowing scalable and maintainable word list updates.
 - **Testing & Hosting:** Deployed static frontend via GitHub Pages: <https://tongcai618.github.io/Wordle-Game-TypeScript/>. Ensured backend availability and security through AWS monitoring and security groups.

TECHNICAL SKILLS

- **Languages:** Java, JavaScript, TypeScript, Python, C, C++, C#, Swift, R, MATLAB, Assembly
- **Frontend:** React Native, React.js, Tailwind CSS
- **Backend:** Spring Boot, Node.js, Redis, RabbitMQ
- **Tools & Platforms:** Git, Redis, Linux, Google Cloud Platform (GCP), JWT, OAuth 2.0