

# Quanjing Chen, PhD

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## Technical Skills

**Front-End** - JavaScript (ES5 and ES6), TypeScript, Next.js, React, React Native, Redux, Svelte, HTML5, CSS3

**Back-End** - Node.js, Socket.io, PostgreSQL, MongoDB, Firebase, RESTful API, GraphQL

**Testing/Deployment** - Jest, Mocha, Chai, AWS: EC2, Test Driven Development (TDD), K6, Loader.io, Docker, CI/CD

**Developer Tools** - Vim, Git, npm, Webpack, Babel, Agile Methodology, Scrum

**Data Science/Machine Learning** - Python (NumPy, scikit-learn, Pandas, SciPy, PyTorch), R, MATLAB

## Software Application Development Experience

**Cofounder/Full-Stack Engineer, HeartBeat** – [Live Link](#), [Repo Link](#) – Next.js | TypeScript | GraphQL 6/2023 - Now

*A LinkedIn-inspired web platform tailored for nurses, connecting them with potential employers*

- Integrated a **CI/CD** pipeline into the development process, automating website updates with each push/pull to GitHub.
- Implemented **Apollo** Server and Client for **GraphQL**, facilitating efficient and flexible data fetching.
- Boosted Lighthouse performance score by **10%** by implementing **server-side rendering**, **cache control**, and React's lazy function with Suspense for image **lazy loading**, resulting in faster rendering and improved initial load times.
- Utilized the **useRef** hook in React along with Flexbox and grid utilities in **Tailwind CSS** for responsive design.

**Full-Stack Software Developer, BurnIt** – [Repo Link](#) – React Native | Redux | Firebase | Generative AI 4/2023 - 5/2023

*A mobile chatbot that tracks daily physical activity and calorie intake, and offers personalized recommendations*

- Developed cross-platform mobile applications using **React Native** with **Redux** for optimized state management.
- Built a chatbot that calculates daily calorie intake and physical activity based on **natural language input** (**Nutritionix** NLP API) and provides personalized recommendations (**OpenAI** gpt-3.5-turbo API).
- Used **Firebase** for social media-based authentication, providing a convenient and secure login experience.

**Back-End Software Engineer, Atelier API Extension** – [Repo Link](#) – Node.js | PostgreSQL | AWS | Nginx 2/2023 - 3/2023

*Designed and optimized an API server and database to support an e-commerce application with millions of products*

- Constructed a scalable back-end system with **RESTful APIs** to underpin the front-end of an e-commerce platform.
- Utilized **ETL** processes to transform over **10 million** lines of CSV data into a **PostgreSQL** database.
- Reduced the single-query latency by **90%** through a combination of **indexing** and the implementation of **Redis cache**.
- Boosted requests per second by **300%** through horizontal scaling using 3 **AWS EC2** micro instances and **Nginx** load balancer with caching for efficient traffic management.

**Front-End Software Engineer, Project Atelier** – [Repo Link](#) – React | HTML5 | CSS3 | AWS | Jest 1/2023 - 2/2023

*A user-friendly platform for online browsing and purchasing*

- Collaborated with a **team of 4** to develop and implement a front-end interface for a fashion eCommerce project, achieving **90%** code testing coverage with **Jest** to guarantee quality and reliability.
- Designed interactive style and image carousels using React's **useContext** and **useRef** hooks for easy toggling between styles and viewing product images with expand and zoom options.
- Constructed an optimized purchasing workflow utilizing React's **conditional rendering** and **filtering** methods.

## Professional Experience

**University of Rochester** – Postdoc Research Associate – [Google Scholar](#) – Python | Matlab | Machine Learning 2018 - 2021

- Constructed a data processing pipeline leveraging **Bash** script and **Python** for neuroimaging datasets, utilizing clusters for parallel processing, enhancing data processing speed by over **500%**.
- Authored over **20** peer-reviewed publications with a total citation count > **500**.
- Developed an innovative **computational** approach to identify specific brain markers, which can serve as a potential target for developing effective cognitive training. [Publication Link](#)
- Utilized a **sliding window** approach and **machine learning** techniques for identifying task-independent ECG shapelets which successfully predicted cognitive and neural gains after cognitive training. [Publication Link](#)

## Education

**Hack Reactor** | Certificate in Advanced Software Engineering 2023

**University of Rochester** | Ph.D. in Brain & Cognitive Sciences 2013 - 2018

**Beijing Normal University** | B.S. in Psychology 2006 - 2010