

# Chenyang (Raphael) Du

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## EDUCATION

### Santa Clara University, CA, USA

Sep 2023 - May 2025 (Expected)

Master of Science in Computer Science

GPA:4.0/4

Related Courses: Design and Analysis Algorithms, Operating Systems, Web Development, Computer Networks, Computer Architecture, Artificial Intelligence, Database System, Natural Language Processing

### Duke University, NC, USA

Sep 2021 - Jun 2023

Master of Science in Civil and Environmental Engineering (Track in Risk Engineering)

GPA:3.81/4

Related Courses: Deep learning, Machine learning, Bayesian Statistical Modeling, Risk and Resilience Engineering

## TECHNICAL SKILLS

Language	Java, JavaScript, TypeScript, C++, Python, HTML/CSS, SQL, R, Verilog
Frameworks	Django, React, Three.js, Node.js, Next.js, Remix.js, Redux, PyTorch
Databases & Tools	Git, GitHub, AWS, Shell, Docker, Linux, MySQL, MongoDB, LaTeX, Figma, Postman

## WORK EXPERIENCES

### Software Engineering Intern

San Francisco, California

Datatrixs

Mar 2024 - Present

- Developed and maintained a responsive, AI-driven accounting platform using the **MERN** stack, deploying through **AWS Amplify**. Applied **Agile** and **Scrum** methodologies to enhance development efficiency and integration processes.
- Designed and implemented a REST API using **Node.js** and **Express**, achieving a **25%** improvement in response time and a **30%** reduction in server load. Further optimized application functionality by integrating **Redux** for advanced state management.
- Proactively identified and rectified user-reported bugs and performance issues, driving continuous improvements in site performance. Implemented iterative enhancements that significantly boosted user satisfaction and increased conversion rates.

### Full Stack Web Developer Intern

Burbank, California

Cooledtured Collections

Nov 2023 – Mar 2024

- Contributed significantly to the migration of Cooledtured's storefront from Shopify's front-end to a React based custom Headless e-commerce stack (**Shopify Hydrogen + Remix.js**), resulting in faster page load. This transition unlocked greater scalability for future growth and enhanced the platform's performance.
- Collaborated with UI/UX and Web Dev teams to build website using **React** with **TypeScript** and **Tailwind** resulting in an increase in average session duration and improved user engagement.
- Implemented a robust search engine using **GraphQL** query, with predictive search features and integrated product recommendations, driving a **15% boost** in product discovery and a **10% rise** in sales conversions.

## PROJECTS & RESEARCH

### Personal Portfolio Website | [Portfolio](#)

Built a responsive and customizable portfolio website using **Next.js** with **Typescript** and **Tailwind CSS**.

### Video Game Sharing platform

- Designed a thriving user review and recommendation platform for video games with **MERN** stack, empowering players to find their next obsession.
- Built a **RESTful API** in **Node.js** with **Express**, seamlessly integrating with **MongoDB** to power data retrieval and storage. Designed dynamic user interface with **React** as the front-end and created custom hooks for state control between authorized and unauthorized modes.

### Restaurant Management System

- Architected and implemented **REST APIs**, leveraging the **Django REST Framework**, enabling a range of functions, including menu-item management, cart operations, and order processing.
- Orchestrated seamless integration with Django models, ensuring data consistency and timely updates within the **MySQL** database. Implemented various features such as authentication, search functionality, pagination, and API throttling for different users and use **Postman** to test and debug API.

### Master Thesis

*"Estimating ground-level PM2.5 using micro-satellite images, meteorological and temporal information"*

- Developed a novel **Implicit Composite Kernel-Random Forest (ICK-RF)** joint model that accurately predicts local PM2.5 air pollution hotspots at a 300 m resolution. It integrates diverse data sources, including daily high-resolution satellite imagery, meteorological conditions spatial, and temporal information, effectively incorporates seasonal variations and achieving significant accuracy improvements in PM2.5 prediction over existing methods.