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

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, C++, Python, HTML/CSS, SQL, R, Verilog
Frameworks	Django, React, Tailwind CSS, Node.js, Next.js, Remix.js, PyTorch, Shopify Hydrogen
Databases & Tools	Git, GitHub, MySQL, MongoDB, GraphQL, LaTeX

WORK EXPERIENCES

Full Stack Web Developer Internship Burbank, California
Cooledtured Collections Nov 2023 – Present

- Contributed significantly to the migration of Cooledtured's storefront from Shopify's front-end to a custom Headless e-commerce solution (**Shopify Hydrogen + React/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 CSS** resulting in an increase in average session duration and improved user engagement.
- Implemented a robust search engine using **GraphQL**, with predictive search features and integrated product recommendations, driving **a 15% boost** in product discovery and **a 10% rise** in sales conversions. This enhancement significantly improved user engagement metrics.
- Identified and resolved user-reported bugs and performance issues, continuously improving site performance, and implementing iterative enhancements to ensure sustained user satisfaction and increased conversions.

PROJECTS & RESEARCH

Video Game Sharing platform

- Built a thriving user review and recommendation platform for video games, empowering players to find their next obsession. Fueled by the **MERN** stack, I crafted a dynamic full-stack web app for video game enthusiasts to connect, share, and discover.
- 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 API

- 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 Insomnia to test and debug API.

Master Thesis

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

- Designed an **Implicit Composite Kernel-Random Forest (ICK-RF)** model that predicts local PM2.5 hotspots at a 300 m resolution using satellite imagery, and meteorological, spatial, and temporal information.
- Utilized **Convolutional Neural Network (CNN)** to extract micro-satellite image features that characterize daily dynamic changes. Implemented a **Random Forest (RF)** regressor to estimate PM2.5 based on the extracted image features along with meteorological conditions and presented an **Implicit Composite Kernel** framework to incorporate seasonal information.