

Richard Gu

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EDUCATION

Cornell University | *M.Eng. Computer Science* Aug 2024 – May 2025

Cornell University | *B.A. Computer Science, minor Data Science, Business* Aug 2021 – May 2024

- GPA: 3.92 | Dean's List | Alpha Kappa Psi | Bits On Our Minds Winner | Club Tennis
- Relevant Coursework: Algorithms, Large-Scale Machine Learning, Computer Vision, Operating Systems, Computer System Organization, OOP & Data Structures, Parallel Computing, Databases, Discrete Math, Probability & Statistics

PROFESSIONAL EXPERIENCE

Niantic Labs | *Computer Vision Engineer Intern* San Francisco, CA | May 2024 – Aug 2024

- Achieved a 12x acceleration in feature matching latency within a 3D vision mapping pipeline by leveraging SIMD-based low-level parallelism in C++, optimizing dynamic memory allocation, and refining sequential frame selection strategies.
- Boosted localization recall by 3% and enhanced 3D point triangulation accuracy through hierarchical clustering that reconnected broken feature tracks via precise 3D point projections, resulting in longer, more accurate tracks.

Niantic Labs | *Software Engineer Intern* San Francisco, CA | May 2023 – Aug 2023

- Launched a reality channel using TypeScript, GraphQL & Go for a social platform connecting Pokémon Go players with 4M DAUs, enabling 6K attendees to interact with live event locations on a customized map for Go Fest 2023
- Developed a dynamic framework for event coordinators to customize Go Fest parks by matching habitats to Pokémon types, automatically generating themed environments based on S2 cells and using CSV file uploads

Joachims Lab | *Machine Learning Researcher* Ithaca, NY | Dec 2023 – present

- Bias in machine learning ranking policies – Producing fair rankings of candidates from demographic groups under disparate uncertainty levels. Advised by Professor Thorsten Joachims.
- Created experiments to learn fair groups and the most relevant features in predicting relevance probability, using SciPy & JAX solvers, projected gradient descent, Numpy, and PyTorch to fine-tune constraint tolerance.

Cornell University CIS | *Teaching Assistant (ML, CompArch, DSA)* Ithaca, NY | Aug 2022 – present

- Teach weekly sections of 40 students, hold office hours for a class with 600+ students, and develop auto-grading tools. Ideate and improve supervised learning projects using NumPy & PyTorch on Jupyter Notebooks

8th Wall | *Software Engineer Intern* Palo Alto, CA | May 2022 – Aug 2022

- Spearheaded the development of a new client onboarding page for the industry's leading WebAR platform, boosting user activation by 17% through a personalized content recommender for 10,000+ AR developers leveraging the YouTube API

LEADERSHIP & ACTIVITIES

Cornell Design & Tech Initiative | *Technical Project Manager & Software Developer* Feb 2022 – present

- Leading a team of 12 developers and designers to build Queue Me In, a Firebase web app streamlining office hours built using TypeScript & React. Driving session analytics and feedback for TAs and professors to improve future office hours.
- Winner of Cornell's 2024 BOOM Showcase Faculty Choice Award. Used by 3000+ users across 16 courses

Association of Computer Science Undergraduates | *Corporate Team Lead* Sep 2022 – May 2024

- Directed outreach raising \$6000+ from sponsors to support an 800+ member organization. Host & manage logistics for company recruiting events including info sessions & tech talks attracting 50-200 students

PROJECTS

Dirty Dish Detectors

- Developed a real-time object recognition system utilizing ResNet and YOLO algorithms to identify and track unattended objects with 84% accuracy, using OpenCV and PyTorch for image processing, training, and fine-tuning

Touchline

- Built a real-time sports news platform using the MERN stack, sourcing historically reputable journalists with Puppeteer

TECHNICAL SKILLS

Languages: Java, Python, C++, TypeScript, JavaScript, Golang, Swift, OCaml, SQL, Bash, YAML, HTML/CSS

Tools/Libraries/Frameworks: Git, GCP, AWS, MongoDB, Firebase, React, Next.js, Redux, Node.js, Express.js, GraphQL