

Richard Zhang

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EDUCATION

University of California, Irvine

B.S. Computer Science, Intelligent Systems

Irvine, CA, USA

Sep. 2021 - Aug. 2025

Relevant Coursework: Data Structures & Algorithms, Information Retrieval & Search, Machine Learning & Data Mining, Artificial Intelligence, Database Systems, Computer Networks, Computer Organization & Architecture, Human-Computer Interaction & UI Software, Discrete Mathematics, Probability & Statistics.

WORK EXPERIENCE

Software Development Engineering Intern

OinAuto, CA, USA

Jul. 2024 - Sep. 2024

- Partnered with Honda to test and refine driving-scene object detection, delivering accurate real-time demos across vehicles, pedestrians, traffic lights, and signs.
- Trained the SSD MobileNet V3 detection model in TensorFlow/Keras and deployed it with OpenCV for live video, auto-drawing bounding boxes and labels for 10+ objects.
- Improved detection precision 23% by increasing input resolution and requiring high-confidence detections, evaluated on a driving dataset with a 50% box-overlap rule, while maintaining smooth 30 fps video.

Full-Stack Software Development Intern

Patriot Conceptions, CA, USA

Aug. 2023 - Jan. 2024

- Developed and launched company's application site to review candidates used by 100+ users, owning the full stack from data model and APIs to secure access and page performance.
- Managed user logins with Firebase Authentication and built validated Next.js API routes, storing application data in Firestore under security rules to keep reads and writes fast and safe.
- Standardized Next.js routing with Tailwind/PostCSS pipeline to speed page additions while keeping builds consistent across machines and CI.

PROJECTS

UnbiasedNews Python, NewsAPI, HuggingFace

Jun. 2025 - Present

- Engineered a news pipeline that ingests U.S. articles in real time, groups coverage of the same event, and delivers concise summaries to enable quick comparison of viewpoints.
- Achieved full text extraction from 92% of source pages linked by NewsAPI, using a two step scraper with headline and body checks, ensuring reliable inputs for grouping and summarization.
- Applied SentenceTransformers to create numeric article representations and grouped same-event stories by similarity, then generated a BART summary for each group and saved the results to JSON.

DigiPrescription Flutter, Dart, Java, Swift, Android/iOS/Web

Oct. 2024 - Feb. 2025

- Developed a Flutter/Dart prescription manager for Android and iOS that supports medication entry with editing, reminders, and history review.
- Integrated storage in SQLite via sqflite to enable offline use, ensured complete saves with transactions, preserved records across app updates with migrations, and enabled JSON export and import.
- Integrated Flutter to native features through platform channels, enabling local notifications, barcode scanning, and text to speech in Java/Kotlin on Android and Swift/Objective C on iOS.

Search Engine Python, BeautifulSoup

Sept. 2024 - Dec. 2024

- Led development of a Python search engine that gathers webpages responsibly, making tens of thousands of documents searchable.
- Engineered a custom tokenizer and inverted index with TF IDF to normalize text and enable fast relevance ranked lookups, using batch processing and on disk merges to stay within memory.
- Improved precision by requiring all query terms to be present before TF IDF cosine ranking with precomputed norms, reducing noisy matches and lowering typical query time to under 50ms.

TECHNICAL SKILLS

Programming Languages: Python, C++ , Java, HTML/CSS, JavaScript, Typescript, Dart, Swift, Kotlin, Objective-C, SQL

Libraries and Tools: React, Next.js, Node.js, Express, Flutter, Firebase, Algolia, Material UI, Figma, OpenCV, spaCy, YAKE, NumPy, Git/Github, Docker, AWS, REST APIs, Linux, CI/CD, Agile, Tailwind

ML Architectures: PyTorch, Hugging Face, RoBERTa, BART, TensorFlow, NLP, Object-Oriented Programming