

Nicole Nghi Trieu

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Full Stack Web Developer with a background in Science Education and a passion for continuous learning. Skilled in combining communication and problem-solving to develop scalable user-friendly applications. Experienced in creating readable, efficient code in object-oriented programming and database model infrastructures, and eager to contribute strong analytical skills and attention to detail to complex projects.

TECHNICAL SKILLS

Languages: Python, JavaScript (ES6+), TypeScript, SQL, Gremlin, HTML5, CSS3

Frontend: React.js, Next.js, Redux, Shadcn UI, Tailwind, jQuery, Bootstrap

Backend: FastAPI, Flask, Node.js, Express.js, SQLAlchemy, Celery, Pydantic

APIs & Integration: REST APIs, GraphQL, Apollo GraphQL, OpenAPI/Swagger UI

Databases: PostgreSQL, MySQL, MongoDB, Amazon RDS, Amazon Neptune, Amazon DocumentDB, Alembic

Cloud & DevOps: AWS (S3, EC2, Lambda, Amplify, AppSync), Vercel, Heroku

Development Tools: Git/GitHub, Visual Studio Code, Jupyter Notebook, Poetry, pip, Pandas

Database Tools: Gremlin Console, MongoDB Compass, pgAdmin4, MySQL Workbench, Apache TinkerPop

Design & Testing: Figma, Insomnia, Canva

TECHNICAL EXPERIENCE

Zymo Research Corporation

Jr. Software Engineer

January 2024 - present

Irvine, CA

Developed full-stack bioinformatics and business intelligence solutions, focusing on API integrations, microservice architectures, and automated data processing pipelines:

- **Built integration pipeline** connecting gut health report platform to multi-omics analysis platform for automated sample processing, customizing endpoints that orchestrate external API workflows to generate GMW12 scores and enterotype classifications from bioinformatics pipelines.
- **Designed and implemented async file transfer system** using Celery workers and Redis message broker to handle large-scale FASTQ file uploads to cloud storage, with comprehensive status tracking and error handling.
- **Developed RESTful APIs with FastAPI** featuring Pydantic validation, SQLAlchemy ORM integration, and automated OpenAPI documentation, supporting admin sample submission workflows and real-time bioinformatic pipeline monitoring.
- **Engineered automated lead generation pipeline** that retrieved physical mailing and email addresses from multiple web APIs, **directly contributing \$17,435.91 in company profits** through enhanced marketing campaign effectiveness and improved client conversion rates.
- **Built graph database infrastructure** for business intelligence metadata storage using interconnected vertices and edges, improving data relationship mapping and query performance for complex analytics, and **developed user portal** enabling intuitive data exploration and functional querying.

Zymo Research Corporation**Graph Database Intern****August - December 2023****Irvine, CA**

Collaborated with data scientists to develop and optimize a graph database for data annotation:

- Converted an SQL-based database to a Gremlin-Python-based graph database, significantly improving data relationships and query efficiency, hosted on AWS Neptune.
- Integrated and built AI agents using OpenAI ChatGPT-4 to automate workflows and enhance data mining capabilities, increasing productivity and accuracy.
- Developed prototypes for efficiently grouping annotation sets and ingesting data into the graph database, streamlining the data annotation process.

PREVIOUS WORK EXPERIENCE**The Stern Math and Science School,
Alliance College-Ready Public Schools
Environmental Science Teacher****August 2021 - June 2022****Los Angeles, CA**

Utilized technology to develop science and engineering skills for 100 11th and 12th grade students

**Dana Middle School,
Los Angeles Unified School District
Integrated Science & Health Teacher****August 2020 - June 2021****San Pedro, CA**

Designed lab-based science instruction for 120 diverse 6th and 7th graders in virtual learning environments

**McFadden Intermediate,
Santa Ana Unified School District
Integrated Science Student Teacher****August 2019 - May 2020****Santa Ana, CA**

Designed and executed NGSS-aligned lesson plans for diverse 7th grade class, including ELL students from South American countries

EDUCATION**Certificate in Full Stack Web Development**

University of California, Irvine

October 2022 - February 2023**Irvine, CA****Bachelor of Science in Biology/Education**

University of California, Irvine

UCI CalTeach Science and Mathematics Program

September 2016 - June 2020**Irvine, CA**