Eugene Cho

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EDUCATION

University of California, Davis — Davis, CA
Bachelor of Science in Computer Science and Managerial Economics — *Sep. 2022 – Present*

EXPERIENCE

Seoul National University Medical School — Jun. 2024 – Sep. 2024
Bioinformatics Research Intern — *Seoul, Korea*
- Researched cancer clonal model determination using monoallelic expression of inactivated genes at the Genomic Medicine Institute at SNU Medical School under Professor Kim Jong Il
- Specialized in analyzing and visualizing large-scale DNA data, utilizing outputs from MuTect2 and HaplotypeCaller
- Developed Python scripts to perform advanced analyses and visualizations on processed data of over **10 million** lines of data

PNA Bio Inc. — Sep. 2023 – Jan. 2024
Bioinformatics Intern — *Thousand Oaks, CA*
- Developed the PNA Designer Tool ☑, a Python algorithm that selects optimal sequences based on parameters like length, melting temperature, purine content, and self-complementarity
- Developed the Donor Designer ☑, an algorithm designed to generate customized DNA sequences with targeted mutations that create restriction enzyme sites, optimized specifically for donor design in CRISPR/Cas9 research applications

CIMPLRX — Jun. 2022 – Sep. 2022
Chemoinformatics Intern — *Seoul, Korea*
- Engineered databases on a Linux server with MySQL to categorize compounds crucial for advanced drug screening processes

EXTRACURRICULARS

AggieWorks — Sep. 2024 – Present
Software Developer — *Davis, CA*
- Developed Cattlelog ☑, a course recommender tool that attracted over **1000** unique users at peak usage
- Collaborated with a team of **8** with software engineers, product managers, and designers in a cross-functional team
- Deployed REST API and PostgreSQL database on VPS, utilizing Docker and GitHub Actions to establish a CI/CD pipeline
- Implemented advanced caching strategies reducing load times by **90%** (from 20s to 2s) and decreasing API calls by **99%**

PROJECTS

ResilientFiles ☑ | *React, TypeScript, ResilientDB, IPFS, FastAPI, Docker* — Dec. 2024
- Directed a team of **4** software engineers to develop a full-stack decentralized file storage system integrating IPFS and ResilientDB as the final project for ECS189F
- Designed and implemented **5+** API endpoints, including file storage, retrieval, and ownership transfer
- Recognized as one of the top projects in the course, leading to official adoption by the ResilientApp organization for continued development and integration into decentralized application ecosystems

Korean Quiz ☑ | *React, Hangul, Sqlite3, Express* — Sep. 2024
- Developed a full-stack web application to test Korean vocabulary and spelling, utilizing SQLite3 for database management

TECHNICAL SKILLS

Languages: Java, Python, C/C++, C#, Kotlin, SQL, JavaScript, TypeScript, HTML/CSS, R, GDscript, Perl, PostHog
Frameworks & Libraries: React, Node.js, FastAPI, Express, Vercel, Render, Sqlite3, Pandas, NumPy, Matplotlib, Seaborn, Plotly, Scikit-learn, Dash, JSON, Uvicorn, ResilientDB, IPFS, Django
Developer Tools: Git, Docker, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse, Android Studio, R Studio, Unity, Godot, VirtualBox, Ubuntu, DBeaver
Relevent Coursework: ECS 36C Data Structures and Algorithms, ECS 122A Algorithm Design and Analysis, ECS 154A Computer Architecture, ECS 150 Operating Systems
Awards: Eagle Scout Award, ACSL Intermediate Division Finalist, Ventura County Fire Department Citizen Award