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 utilizing packages such as Pandas, NumPy, Matplotlib, Seaborn, Plotly, Scikit-learn, and Dash to perform advanced analyses and visualizations on the processed 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
- Additionally developed the Donor Designer, an algorithm designed to generate customized DNA sequences with targeted mutations that create restriction enzyme sites while preserving amino acid sequences. This tool was 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, employing MySQL to organize and categorize chemicals and enzymes crucial for advanced drug screening processes
- Utilized Neo4j to generate graphics and diagrams, visualizing complex data structures, uncovering trends, and elucidating key connections within the dataset

Extracurriculars

AggieWorks — Sep. 2024 – Present
Software Developer — *Davis, CA*

- Contributed to the development of a course recommendation tool by building the backend with FastAPI, utilizing BeautifulSoup4 for web scraping, and applying NLTK Vader for sentiment analysis
- Collaborated with product managers and designers to develop a full-stack application, iterating on existing features while contributing to both backend and frontend development
- Employed both Agile and Waterfall methodologies in a cross-functional team to effectively manage project timelines, adapt to changing requirements, and ensure cohesive communication across development, design, and product management teams

Projects

ResilientFiles | *React, TypeScript, Axios, ResilientDB, IPFS, FastAPI, Docker* — Dec. 2024

- Led the development of a full-stack decentralized file storage system integrating IPFS and ResilientDB as part of a project for ECS189F
- Designed and implemented 5+ API endpoints, including file storage, retrieval, and ownership transfer, ensuring secure and efficient operations
- Collaborated with a 4-member team to optimize system performance, supporting seamless data transfers in a decentralized network
- 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, JavaScript, Hangul, Axios, Sqlite3, Express* — Sep. 2024

- Developed a full-stack web application with a backend built using Express and Sqlite3, and a frontend using React, with Axios for API calls
- Defined multiple API endpoints in the backend and utilized Sqlite3 for database creation

Technical Skills

Languages: Java, Python, C/C++, C#, Kotlin, SQL (Postgres), JavaScript, TypeScript, HTML/CSS, R, GDscript, Bash
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, TravisCI, Google Cloud Platform, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse, Android Studio, R Studio, Unity, Godot, VirtualBox, Ubuntu
Relevent Coursework: ECS 36C Data Structures and Algorithms, ECS 122A Algorithm Design and Analysis, ECS 154A Computer Architecture, ECS 150 Operating Systems