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