WooHyun **Jeong**

📞 Contact

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🏠 https://github.com/W99Hyun

🏠 https://velog.io/@jwh1802/posts

👤 About Me

"Nothing is impossible."

- I am a proactive person.
- I am a diligent individual.
- I am a polite person.

✥ Skills

Programming Languages

C, C++, Python,

HTML, CSS, JavaScript, React

Systems & Tools

SQLite, Docker, Linux, Git

Bioinformatics Tools

AlphaFold, ColabFold, HADDOCK,

Foldseek, SaProt, PyMOL, BLAST

🎓 Education

Hongik University   2019 ~ 2026(Expected)
B.S. in Computer Engineering

Total GPA of 4.03 / 4.5, Major GPA of 4.35 / 4.5
(Credits take: 116/134)

💼 Internship

Intelligent Platform Lab, Hongik University   July. 2024 ~
UNDERGRADUATE RESEARCHER

- **Automated bioinformatics workflows** by creating custom Python scripts.

- **Designed and maintained a web platform** to facilitate lab activities and data sharing.

- **Used various bioinformatics tools** for data analysis and research automation.

- **Handled and processed large-scale bioinformatics datasets** for research purposes.

💼 Project Experience

Bioinformatics Web Platform Development

- **Built a research lab website** using HTML, CSS, and JavaScript for the frontend, Flask for the backend, and SQLite for the database.

- **Created and managed a BLAST database** and utilized Python to handle BLAST library operations.

- **Processed and analyzed large-scale datasets**, including PDB files and protein / peptide information.

Developed an automated script for generating positive complexes using HADDOCK.

- **Performed docking with HADDOCK** to create complex decoys closely resembling native complex structures for training AI models

- **Automating the workflow based on HADDOCK functionalities**.

- **Processed PDB files**, handling diverse formats using regular expressions to automate the script.

💼 Project Experience

- **Presentation on CNN & SaProt** in "Advanced Data Analysis"
  - **Trained a CNN model** using sequence data to identify sequences with a high binding probability to Trastuzumab.
  - **Generated PDB structures using AlphaFold** for the identified sequences.
  - **Tokenized the PDB data with Foldseek** and analyzed the tokenized data using **SaProt to predict mutation probabilities.**

- **Presentation on HADDOCK** in "Advanced Data Analysis"
  - Summarized **HADDOCK installation and usage**.
  - Reviewed the **ab initio docking function**, which defines AIRs randomly when no experimental data is available.
  - Conducted and summarized an example of **antibody-antigen docking**.
  - Documented the use of the **docking-multiple-ambiguous function** with multiple restraint files.

🎓 Awards & Honors

- 25-1 Full Scholarship, Jeongsu Scholarship Foundation
- 24-2 Full Scholarship, Jeongsu Scholarship Foundation
- 24-1 Full Scholarship, Jeongsu Scholarship Foundation
- 23-2 Hongik Academic Excellence Scholarship

- Hongik Self-Directed Learning Club (Winter Sessions) Dec. 23, 2024 – Feb. 23, 2025
- Hongik Self-Directed Learning Club (Winter Sessions) Dec. 25, 2023 – Feb. 18, 2024
- Hongik Major Master Program (Peer mentorship resulting in improvement from an F to an A+.), Sep. 2023 ~ Nov. 2023

📖 Extracurricular Activities

Hive Start-Up Club
Project Manager   Mar. 2024 – Dec. 2024

Ticketeers: Developed a ticketing platform preventing illegal resales.
- Admitted to Hana Ventures' University Startup Program.
- Implemented features to restrict ticket resale outside the platform and reduced server load by segmenting purchase times.

Enactus
Social Entrepreneurship Member   Mar. 2024 – Sep. 2024

Participated in a social entrepreneurship club focused on solving social issues through innovative projects.
- 모다떡: Revitalization project for local rice cake businesses.
- CheaperMore: Automated vending machine for surplus baked goods.
- Unitravel: Platform connecting foreigners with local travel companions.

Catch Me
Project Manager & Developer   Mar. 2024 – Dec. 2024

- Built a real-time web application for personalized matchmaking based on a game system.
- Utilized WebSocket, HTML, CSS, JavaScript, and React for implementation.
- Drafted business plans and applied for government startup funding.

Kahlua Band
President & Performer   Mar. 2019 – Mar. 2021, Sep. 2022 – Dec. 2023

- Performed as a vocalist, guitarist, and pianist in five stage events.
- Organized many events including Christmas concerts, and fall sports festivals.