Jiwu Jang

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Education

High school

Stanford Online High School   **Palo Alto, CA**
Part-time enrollment, Grade 11 to 12   *Fall 2023 – Spring 2025*
Coursework: UM150 Multivariable Calculus, UM152 Number Theory, UM157 Logic in Action: A New Introduction to Logic, UM160 Discrete Mathematics, UM170 Geometry of Numbers, HRMCF Math Competition Club.

Hankuk Academy of Foreign Studies   **Yongin, South Korea**
High School Diploma, Grade 10   *Spring 2022 – Spring 2025*
G.P.A. 5.0 / 5.0, Relative Grade: 2.9. Coursework: Precalculus, English, Korean, Computer Science, Natural Sciences, Social Studies, Korean History, Spanish Language & Composition, Spanish Culture & History.

Gifted education

Hanyang University Gifted Education Program (HYGEC)   **Seoul, South Korea**
Advanced class, Grade 6 to 8   *Mar 2019 – Dec 2021*
Coursework: Linear Algebra, Discrete Math, Computational Complexity Theory, Algorithms, Data Structures, Optimization, Computer Systems, and Machine Learning. Was awarded first place in long-term projects for "pryst" — a statically and strongly typed programming language much alike to TypeScript, without the hassle of the JavaScript ecosystem.

Scholarships and awards

The Ross Mathematics Program: 2023 (first-year student, acceptance rate 3.6%)

United States of America Computing Olympiad (USACO): Gold division, promoted January 2023

Hansung Nobel Scholarship: awarded $10k, January 2023 – December 2024

American Regions Math League (ARML) Final: Selected as a member of the only team that represents South Korea in ARML 2023 (KGSEA Korea, 2023).

American Regions Math League (ARML) Local: 9th place team out of 300 teams (KGSEA Korea B, 2023).

Stanford Math Tournament (SMT): Distinguished Honorable Mention (Top 20%) for both Algebra & Geometry round.

World Mathematics Team Championship (WMTC): 1st place (HAFS M4, 2022)

Purple Comet! Math Meet (PCMM): 2nd place in South Korea (Homie O'Morphism, 2023).

American Invitational Mathematics Examination (AIME): qualified 2022, 2023

Korea Olympiad in Informatics (KOI): Silver medal, June 2021

Korea Code Fair (KCF) Hackathon: Silver medal, August 2022 – November 2022

AP Computer Science A Perfect Score: one of 369 out of 78510 test takers (Top 0.47%) to get a perfect score, May 2022

National Merit Scholarship Index: PSAT/NMSQT 1480 (99th Percentile, 220 Index), October 2022

USA(J)MO Index: 187 (AMC12 117, AIME 7, November 2022)

IMC-IMPEA: 2nd place out of 143 teams world-wide, April 2023

Projects

konne.ai: A word training platform powered by machine learning.

dustackle: A Facebook chatbot that provides real-time information about fine dust levels and related statistics. Developed using TypeScript, Nest.js, Fastify, and Dialogflow.

pryst: A programming language made with Java, GraalVM, and ANTLR4.

rehype-twemojify: An emoji-to-twemoji converter that runs on top of the *unified.js* ecosystem.

smartquotes-ts: A port of smartquotes.js to TypeScript.

ASKY: A virtual girlfriend developed using Unity/C#, Python Flask, and LUIS.ai. Can talk and play some games with the user using natural language processing. Presented in front of other HYGEC students.

Work experience

Software

Software developer: Dogugonggan Co., Ltd. *August 2022*

Interned at a Seoul-based robotics tech startup that focuses on autonomous security patrol and disinfection robots. Developed an interchangeable speech-to-text module with TypeScript for NVIDIA Jetson NX. Gave internal tech talks about cross-platform app frameworks such as React Native, Flutter, and Ionic. Reference: Cheng-Hao Quan.

Volunteer and outreach

Instructor: After-school math tutoring *December 2022 – February 2023*

Taught algebra and geometry to elementary and middle school students at Solomon Regional Children's Center.

Programming experience

TypeScript, Next.js, React, Node.js, gRPC, WebSocket, REST APIs, Nest.js, Express.js, Fastify, C++, Java, ANTLR4, LaTeX, Vim, Linux (Arch Linux on i3).

Extracurricular activities

Choir (2013 – 2023): Performed in *Turandot* and *Carmen* at Seoul Arts Center and Sejong Center for 6 years through Songpa-gu Youth Choir. Performed in various churches through Seoul Motet Youth Choir. Also performed in-school several times as a member of the school choir.

Lacrosse (2022 – 2023): Not particularly good, but improving. Our team won the national high school league in 2022.

Pure math self-study (2023): Reading books such as "Understanding Analysis" by Stephen Abbott, "Linear Algebra Done Right" by Sheldon Axler, and "Abstract Algebra" by Dummit and Foote.