**Education**

**Stanford University, CA:** Computer Science major, Mathematics minor. Student member of Stanford ACM and [SUAVE](http://suave.stanford.edu/). Also proctored the [AMC10/12](http://www.maa.org/math-competitions/amc-1012) exams held at Stanford. Currently on leave and expected to graduate in 2020 June.

**Seoul National University**: Admitted to the SNU ISI exchange program. Attending from 2017 June~2017 August.

**South Island School, HK:** Received full IB diploma (43/45), AP scholar award, 10A\* grade in I/GCSE. Received ESF Chairman’s Award for Excellence in 2012,2014. Graduated 2014 June.

**Work Experience**

**Algorithm Trading Programmer (2017 March~)**

* Designed a prediction algorithm with a friend from the University of Toronto. Assisted in implementation of a C++ program that uses Coupled Hidden Markov Model for parameter estimation and Viterbi Algorithm for prediction. Helped reduce time complexity of certain algorithmic problems that came up and read papers on machine learning algorithms.
* Effectively used C++ STL for implementation; researched and used external C++ libraries such as NLopt for nonlinear optimization and armadillo for linear algebra calculations like finding eigenvectors.

**Business Team Intern, YJM Games, South Korea (2016 June ~ 2016 August)**

* Designed in game and community events for the mobile RPG game “Am I a hero?” in Google play store. Conducted game testing via the QA server. Presented monthly reports on any bugs found in the game. Learnt simple data manipulation using MySQL.

**Programming teaching assistant (2013 ~ 2014)**

* Taught younger students at South Island School basic Java syntax and object oriented programming. You can view some of my class notes [here](https://www.dropbox.com/sh/m5onmp9kk8p09v2/pYfE9f5KlE). Also encouraged students to solve easy programming challenges.

**Mathematics Background**

* 2015 Principia: Published a [cryptography article](http://www.pumj.org/docs/Issue1/Article_3.pdf) in the Princeton undergraduate Math journal
* 2015 Mathematical Contest in Modeling: Honorable Mention [Link to my team’s paper](https://www.dropbox.com/s/c4g32vbreoc6wbv/33988-MCM%20(1).pdf?dl=0).
* 2014 HKUST Math Excalibur: My solutions were published in some editorials. [Link1](https://www.math.ust.hk/excalibur/v18_n3.pdf),[Link2](https://www.math.ust.hk/excalibur/v19_n1.pdf)
* 2014 HK Mathematics Olympiad: Gold Award, ranked 19th [Official results](http://www.hkmo.com.hk/aimoresulthtml/AIMOSS.html)
* 2013 International Math Olympiad Preliminary Selection Contest-HK: Qualification of Training Award
* 2013 Mathematics essay on methods of approximating square roots. [Paper](https://www.dropbox.com/s/jba3rr5yrbc3utp/Extended_Essay_in_Mathematics_final_version%20(4).pdf?dl=0)
* 2013 American Math Competition: AMC12B school winner, AIME qualifier
* 2013 UK Math Trust Senior Math Challenge: Gold, British Math Olympiad qualifier
* 2013 Purple Comet Math Meet: Honorable Mention, ranked 13/2909 worldwide and 1st in HK
* 2012 Cambridge IGCSE Additional Mathematics: Top in HK Award (score: 99%)
* 2012 UK Math Trust Intermediate Math Challenge: Gold, School winner out of 91 students

**Competitive Programming Background**

* 2016 ACM-ICPC: Member of team “Stanford White”. Ranked 8th out of 144 teams at Division 1 of Pacific Northwest Regional Contest [Official Results](https://icpc.baylor.edu/regionals/finder/pacific-northwest-2016/standings)
* 2017 Google Code Jam: Handle “magicalcat”. Advanced to Round 1 [My experience in the contest](http://blog.naver.com/programmer18/220978948619).
* 2016 Bloomberg Codecon: Placed 4th out of 17 students in the Stanford contest
* USA Computing Olympiad: Silver division contestant
* acmicpc.net: Solved over 1000 programming problems in this online judge [My profile](https://www.acmicpc.net/user/iljimae)
* Algorithm problem solving blog: 30~50 unique visitors everyday. Most of the codes are in C++ [Link to my blog](http://blog.naver.com/programmer18).

**Software Engineering**

* 2D “superball” game made using JavaScript, HTML and p5.js library. The user has to dodge red balls and attack them by emitting yellow balls to survive. [Try the game here.](https://iljimae0418.github.io/superball/)
* Simulation of an algorithm game called “The Euclid Game” made with JavaScript, HTML and p5.js library. [Try the game here](https://iljimae0418.github.io/Euclidgame/). I’m planning to make more algorithm game simulations.
* 2D random maze generator and pathfinder using standard BFS algorithm on an n by m grid. Programmed in C++, uses OOP concepts and can be executed on command line. [View the code here](https://github.com/iljimae0418/mazegeneratorandpathfinder).
* Visualizing overlapping sub-problems for finding nth term of the Fibonacci sequence. [Try the simulation here](https://iljimae0418.github.io/fibtree/).
* Android application “Some useful problems and techniques for AMC12” [available on Google play store](https://play.google.com/store/apps/details?id=org.lukekim1.amc12&hl=en). Solution written in MathJax. More problems to be added to the list.
* List of useful algorithms/data structure implementations for others and myself. The list is growing. [Link](https://github.com/iljimae0418/notebook).

**Technical Skills/Certifications**

* Very comfortable working with C, C++, Unix, Bash
* Comfortable working with Java, JavaScript, HTML, Python, Excel, LaTeX
* Reluctant knowledge of R, Android Studios, C#, SQL/Databases, Photoshop

**Miscellaneous**

* Proficient in English and Korean; Working knowledge of Mandarin Chinese
* Obtained HSK (汉语水平考试) level 4 certification in 2017 April.
* 2013 IBT TOEFL Exam Score: 116/120
* Obtained ABRSM Grade 8 certification in Cello playing in 2012.