# Bill Qin

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## EDUCATION

**Carnegie Mellon University,** Pittsburgh, PA *Aug 2019 – Dec 2022 (Projected)*
**School of Computer Science, Bachelor of Science in Artificial Intelligence**
**GPA: 4.0/4.0**

- **Coursework:** Artificial Intelligence: Representation and Problem Solving, Probability Theory for Computer Scientists, Parallel and Sequential Data Structures and Algorithms, (More) Great Ideas in Theoretical Computer Science, Introduction to Machine Learning, Introduction to Computer Systems

**Phillips Academy,** Andover, MA *Sept 2015 – June 2019*

## SKILLS

- **Programming/Markup Languages:** C++, C, Java, C#, HTML/CSS, JavaScript, JQuery, Python, Ruby (on Rails), PHP, NodeJS, Laravel, Sinatra
- **Technical Skills:** Algorithm Development and Optimization, Full Stack App Development, Machine Learning, Data Analysis and Visualization, Game Design and Development

## PROJECTS AND WRITING

**Tree Visualization Project (v1.0.0)** treevis.herokuapp.com

- Web app that uses mathematical models how trees (the natural kind!) grow in real time. Users own and control these trees, their growth, and more. Developed using Ruby and the Sinatra framework, as well as uses PostgreSQL to store data through JSON on web databases.
- Features a technical writeup that focuses on the logistics and mathematics behind the tree growth.

**Randomized Algorithms** github.com/bqin01/randomized-algorithms

- Paper written in LaTeX analyzing the importance of randomization in modern algorithms, as well as the benefits/drawbacks of using probabilistic algorithms over deterministic algorithms. Data collected through C and visualized using Jupyter Notebook.
- Integrates software that will allow users to simulate certain randomized algorithms in real-time.

## WORK EXPERIENCE

**Logical Systems Lab @ CMU, Scala Developer for KeYmaera X** *Feb 2020 – June 2020*

- Worked to extend KeYmaera X, a hybrid systems axiomatic theorem prover, with trigonometric and exponentiation functions, as well as support for user-defined functions.
- Created and tested working models of above functions for KeYmaera's model database.

**TT Math, Teacher in Mathematics***July 2019 – Aug 2019*

- Taught upper-section mathematics (AMC 12/AIME) in all fields, including algebra, number theory, combinatorics, and geometry.

**Olympiads School, Teacher and Tutor in Math/CS** *June 2016 – Aug 2019*

- Taught classes dedicated to preparing students for math contests
- Provided drop-in sessions that allowed all students to get extra homework help and tutoring.
- Taught classes introducing students to Java and helped design curriculum for newly implemented Python classes

## HONORS

- USAMO (United States of America Mathematics Olympiad) qualifier *(2016, 2018, 2019)*
- USA Computing Olympiad Platinum Division *(2018, 2019)*
- CCO (Canadian Computing Olympiad) Silver Medallist – 10$^{th}$ place overall *(2017)*