

Kevin Gao

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GitHub: github.com/gaojunxuan

My name is Kevin. I am a third-year student at the University of Toronto. I am currently majoring in Computer Science as well as Computational Biology. I am also a freelance app developer with multiple apps published on both App Store and Microsoft Store. I have experience coding in many programming languages ranging from Python and R to C# and Java, as well as a solid background in molecular biology, biochemistry, and genetics.

Education

University of Toronto <i>BSc (in progress), Computer Science and Computational Biology, GPA: 3.9</i>	Toronto, ON <i>Sep 2020 May 2024</i>
Illinois Institute of Technology <i>Non-degree¹, Computer Science, GPA: 4.0</i>	Chicago, IL <i>Jan 2020 Jun 2020</i>
City Colleges of Chicago <i>Non-degree¹, Cellular Biology and Organic Chemistry, GPA: 4.0</i>	Chicago, IL <i>Sep 2019 Aug 2020</i>

Experience

University of Toronto <i>Teaching Assistant - CSC165</i>	Toronto, ON <i>Jan 2022 Present</i>
<ul style="list-style-type: none">– Teaching assistant for undergraduate discrete math course, covering formal logic, proof, number theory, algorithm analysis, and elementary graph theory. Responsible for grading assignments, exams, and answer questions on discussion board and during office hours.	
University of Toronto, Faculty of Applied Science & Engineering <i>Research Assistant / Software Developer</i>	Toronto, ON <i>June 2021 Present</i>
<ul style="list-style-type: none">– Working with Prof. Mahadevan's graduate student on a machine learning algorithm for modeling proteins based on natural language processing and transfer learning. I developed, trained, and assessed multiple non-neural methods for classification of enzyme activity on given substrates. Data preprocessing and transformation is done using Python. SciKit and TPOT are used for model training and selection.	
Forest Hill Tutoring <i>Tutor & Instructor</i>	Toronto, ON <i>Feb 2021 Present</i>
<ul style="list-style-type: none">– Teaching and tutoring high school level computer science, calculus, biology, and chemistry, and university-level computer science courses.	
Jones College Prep <i>Teaching Assistant - AP Computer Science</i>	Chicago, IL <i>Sep 2019 May 2020</i>
<ul style="list-style-type: none">– Assist students with their projects. Help the instructor grade assignments in AP Computer Science Principle and AP Computer Science A.	

¹Credit courses taken while attending high school.

Skills

Programming

- Python
- R
- Java, C#, C++
- JavaScript
- TypeScript
- HTML and CSS

Theoretical Knowledge

- Object-oriented programming
- Analysis and design of data structures and algorithms
- Theory of computation and complexity theory

Frameworks and Tools

- .NET, .NET Core
- UWP (Universal Windows Platform)
- React and React Native
- Git
- Linux
- Microsoft Azure and Windows Server

Biology

- Molecular biology techniques
- Genetic analysis
- Modern sequencing technologies

Computational Biology

- Commonly used bioinformatics packages
- Data retrieval (NCBI Entrez) and organization
- Sequence analysis using alignment tools (BLAST, Needle, etc.)
- Python packages (e.g. BioPython), data visualization using Python
- Command-line-based tools and Unix shell programming

Communication and Teamwork Experience working both independently and in a team setting

Creativity Author of multiple mobile apps and software packages

Projects

GradeTree React Native

<https://github.com/gaojunxuan/GradeTreeCPS>

Grade management tool for high school students. The app greatly improved the user experience compared to the original web-based version. Students can easily check and manage their courses, grades, and attendance records. Data is obtained through web scrapping, and user data is encrypted and stored locally for faster login. The app was widely used by students across the Chicago Public Schools district and gained recognition from district officials.

JPDict C#, .NET, React Native

<https://github.com/gaojunxuan/JPDict>

UWP and iOS Japanese dictionary app for beginners. The app includes features that address many concepts that are hard for beginnings, including verb conjugation, Kanji, and more. I also implemented a lemmatizer using natural language processing that can break down long sentences into individual words. UWP app is built using C# while the iOS/Android client used React Native. Backend is written using .NET Core and hosted on Azure Functions.

IR Tutor TypeScript, React

<https://github.com/gaojunxuan/IRTutor>

Online tools for learning and analyzing IR spectra. It parses spectra in JCAMP-DX format, a standard format for spectra data. Students can highlight certain regions on the spectrum and see the corresponding molecular motions. Original version made by Dr. Charles Abrams in 1993.

Regulare Swift, Java

<https://github.com/gaojunxuan/Regulare>

Study tool for learning computation theory and experimenting different representations of formal language with simulation of regular expression and finite automata.

Awards

University of Toronto International Scholar
University of Toronto, Faculty of Arts and Science

May 2020

Illinois State Scholar
Illinois Student Assistance Commission

May 2020

AP Scholar with Distinction
CollegeBoard

May 2020

Courses

Below is a highlight of some relevant courses² that I have taken.

CSC240 <i>Enriched Intro to Theory of Computation</i>	A+	BCH411 <i>Bioinformatics</i>	A
CSC263 <i>Data Structures and Analysis</i>	A+	BIO230 <i>From Genes to Organisms (Molecular Biology)</i>	A+
CSC207 <i>Software Design</i>	A+	BIO260 <i>Concepts in Genetics</i>	A+
MAT137 <i>Calculus with Proofs</i>	A+	BCH210 <i>Biochemistry I: Proteins, Lipids, Metabolism</i>	A
MAT223 <i>Linear Algebra I</i>	A+	BCH311 <i>Biochemistry II: Nucleic Acids</i>	A+
CSC311 <i>Intro to Machine Learning</i>	A	CSB352 <i>Bioinformatic Methods</i>	A+
CSC373 <i>Algorithm Design</i>	In Progress	BCB420 <i>Computational System Biology</i>	In Progress
CSC343 <i>Intro to Databases</i>	In Progress		

²CSC263 was taken during high school and their grades do not appear on University transcript.