

# Scott Geng

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## EDUCATION

### Columbia University

Expected May 2023

*B.A. Computer Science and Biology*

*New York, NY*

- GPA: 4.1/4.0
- Relevant Coursework: Advanced Programming, Making and Breaking Codes, Data Structures, Statistics
- Selected as a Rabi Scholar, a distinction given annually to the top ~10 incoming freshman STEM majors

## EXPERIENCE

### Columbia University Medical Center

March 2020 – Present

*Student Researcher*

*New York, NY*

- Conduct novel research as the lead contributor on a bioinformatics project centered around the data from cerebellar electroencephalograms of patients with neurological diseases such as Parkinson's Disease and Ataxia
- Analyze patient data by comparing brain waves of diseased patients against healthy individuals using Python-based machine learning and Fourier methods, leading directly to significant publishable results
- Develop Python scripts to automate analysis pipeline, resulting in increased data throughput
- Draft a manuscript detailing results of research for submission to a peer-reviewed scientific journal
- Present project progress using self-designed figures to an interdisciplinary team at weekly lab-wide meetings
- Communicate work to the wider scientific community at Columbia's annual undergraduate research conference

### National Institutes of Health

June 2018 – Aug. 2018

*Summer Research Intern*

*Bethesda, MD*

- Developed gradient-boosting and random forest machine learning models to predict N-glycan occupancy within any protein, a phenomenon critical in understanding important structures such as the surface spikes of HIV
- Scraped data from previously published research using Perl scripts to automate dataset generation

## LEADERSHIP & ACTIVITIES

### Columbia Bach Society

Feb. 2020 – Present

*Webmaster and Board Member*

*New York, NY*

- Organized and executed social bonding events such as parties and club dinners to improve intracub relationships
- Designed club website to better align it with the board's vision, improving our communication with the wider community (columbiabachsociety.weebly.com)

### Frontiers of Science

Sept. 2019 – Dec. 2019

*Teaching Assistant*

*New York, NY*

- Held weekly office hours to help other students in a ~500 student class with lecture concepts and homework

## PROJECTS

### Innovo | Python, Flask, SQL, Bootstrap, HTML/CSS

Sept. 2020 – Present

- Developed a proof-of-concept full-stack web application using Flask, Bootstrap, and SQLite3 that addresses unequal access and big data discrimination within healthcare by connecting doctors directly with patients online
- Implemented database encryption and PBKDF2:SHA256 password hashing to ensure user medical privacy

### nand2tetris | HDL, Python

July 2020 – Present

- Designed a Turing complete CPU in a hardware description language using NAND and D-flip-flop logic gates
- Developed an assembler in Python to convert user-written low-level instructions to CPU-readable bytecode

... and others on [Github](#)

## SKILLS & INTERESTS

**Languages:** Python, Java, Perl, C, Scala, HTML/CSS, SQL, R,  $\text{\LaTeX}$

**Libraries:** NumPy, SciPy, pandas, Matplotlib, seaborn, scikit-learn, H2O

**Developer Tools:** Git, Vim, Shell, VS Code, JupyterLab, IntelliJ

**Interests:** Hiking, classical music, guitar, Counter-Strike, track & field