# Jacob Yeung

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## Education

**University of California, Berkeley** **Berkeley, CA**
*B.S. Electrical Engineering & Computer Science, B.A. Statistics* *Class of 2022*
- Artificial Intelligence, Concepts in Computing w/ Data, Discrete Mathematics & Probability Theory, Concepts of Probability, Multivariable Calculus, Linear Algebra, Differential Equations

## Work Experience

**Cisco Systems** **San Jose, CA**
*Software Engineering Intern | Global Infrastructure Services* *May 2019 - Present*
- Developing UI dashboard using React
- Developing backend API's to send values to be displayed by dashboard

**University of California, Berkeley** **Berkeley, CA**
*Undergraduate Researcher | EECS Department & Helen Wills Neuroscience Institute* *December 2018 – Present*
- Statistically analyzing quantitative susceptibility mapping data of different brain regions with PET scans of β-amyloid and tau proteins to develop a cheaper alternative to identifying Alzheimer's disease

*Research Mentor | Undergraduate Laboratory at Berkeley* *September 2018 – June 2019*
- Leading a 6-person undergraduate team to create a comprehensive summary of research done in reconstructing images through statistical analysis and MVPA (Multi-Voxel Pattern Analysis) of fMRI data

*Officer | Quantum Computing at Berkeley* *October 2018 – Present*
- Educate college students on quantum computing, its developments, and its applications

**University of California, Davis** **Davis, CA**
*Research Intern | Genome Center | Siegel Lab* *July 2017 – March 2018*
- Redesigned the β-glucosidase B (BglB) enzyme to study the effects of single point mutations on Michaelis-Menten constants, protein expression level, and functional melting point
- Revealed the importance of side-chain packing and hydrophilicity through the new structure-function relationships observed in the novelly engineered BglB mutant S14A

*Research Intern | Genome Center | Korf Lab* *July 2017 – September 2017*
- Developed a computer algorithm (Perl) that generates a quasi-language derived from calculated relative frequencies of digrams in a given input file
- Program can analyze any text written in Unicode, enabling analysis of texts written in different languages

**University of California, Santa Barbara** **Santa Barbara, CA**
*Research Intern | Science & Engineering Research Academy (SERA)* *June 2017 – July 2017*
- Designed and researched a project on the decaying rate of various proteins through colorimetric sensing of the amine groups released by decaying proteins using Meldrum's Activated Furan (MAF)
- Confirmed there exists a general trend of increasing amine concentration as proteins spend more time decaying

**Seqmatic** **Fremont, CA**
*Research Intern* *June 2016 – August 2016*
- Developed a novel and cost-efficient NGS method to prepare mRNA samples for sequencing
- Isolated and purified mRNA, synthesized cDNA, and tested the quality of the synthesized cDNA

## Projects

**Cryptocurrency Price Analyzer** *May 2018 – June 2018*
- Built a program (Java) to analyze prices of selected cryptocurrencies from the Poloniex Exchange
- Advises user to buy/sell cryptocurrency by comparing SMA with the calculated Bollinger bands

## Skills

- **Programming Languages**: Proficient in Java, Python, Perl, R, Java Script; familiar with SQL, HTML, CSS, Scheme
- **Wet lab**: PCR, Protein redesign, Kunkel Mutagenesis, Protein/DNA/RNA purification/extraction, Mass spectrometry
- **Software**: Git, Unix/Linux, AWS, PyMOL, Adobe Photoshop, FoldItStandAlone (Rosetta derivative), Microsoft Office

## Awards

- **National Merit Semifinalist** – Awarded for scoring in top 1% of 1.6 million juniors on the PSAT *September 2018*
- **National AP Scholar** – Awarded for scoring at least an average of 4 out of 5 on 14 AP Exams *June 2018*
- **1st Place Alameda County Science Fair** – Awarded for research project on the BglB enzyme *March 2018*
- **Zero Robotics ISS Finalist** – Placed 3rd globally; Code run on miniature satellites inside the ISS *January 2017*
- **3rd Place National TSA TEAMS** – Placed 1st in Problem Solving, 3rd overall for the TSA TEAMS competition *June 2016*