GILLIAN CHU

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EDUCATION

MS University of Illinois at Urbana-Champaign, Computer Science May 2022 *(Expected)*

BS University of California Berkeley, Computer Science December 2020
Minor in Bioengineering

HSD Phillips Exeter Academy May 2016

RESEARCH INTERESTS

Computational Biology, Computational/Statistical Genetics, Probabilistic Graphical Models.
My interests are at the intersection of computer science, statistics and biology. I'm interested in understanding the genetic basis for complex traits, as well as studying adaptive evolution.

FORMAL INDUSTRY & RESEARCH EXPERIENCE

Research Assistant, Lawrence Berkeley National Lab *Sept 2020 - Present*
Advisor: Jessica Granderson
- Improved prediction of unusual peak energy-use events for smart building technologies

Research Assistant, University of California Berkeley *Sept 2019 - Present*
Advisor: Priya Moorjani
- Built an efficient method of uncovering founder events in modern populations
- Built and tested an efficient and accurate local ancestry inference method

Researcher, Sperax *Apr 2018 - Present*
- Analyzing consensus protocols for distributed systems, and researching token economics
- Building the test net implementation

Research Assistant, University of California Berkeley *Sept 2019 – Dec 2020*
Advisor: Satish Rao
- Built a statistically consistent distance-based phylogenetic tree inference algorithm

Research Assistant, University of California Berkeley *Sept 2018 – Dec 2019*
Advisor: John Marshall
- Optimized probabilistic gene drive model by redesigning movement kernel

Databricks, San Francisco *May – Aug 2019*
Software Engineering Intern, Observability Team
- Implemented distributed tracing for performance analysis across microservice architecture

Consensys, San Francisco *June – Aug 2018*

Software Engineering Intern, Standard Bounties
- Built RESTful API, React.js library and smart contract webapp using distributed file storage

Office of Intellectual Property & Industry Research, Berkeley *May 2016 – Feb 2017*
System Administrator
- Implemented and tested Apex web portal used by hundreds of researchers for patent process

TEACHING EXPERIENCE

University of California Berkeley

- **Operating Systems and System Programming.** CS162. Reader, UC Berkeley EECS. Su'20.
- **Efficient Algorithms and Intractable Problems.** CS170. Undergraduate Student Instructor, UC Berkeley EECS. Fa'18, Spr'19, Fa'19, Spr'20.
- **Discrete Mathematics and Probability.** CS70. Reader, UC Berkeley EECS. Fa'17, Spr'18, Su'18.

- **Building with Blockchain for Web 3.0.** Guest Lecturer, UC Berkeley IEOR. Spr'20.
- **Blockchain Fundamentals.** CS198. Lecturer, UC Berkeley. Spr'18, Fa'18.
- **Blockchain for Enterprise.** Guest Lecturer, UC Berkeley Haas. Spr'19. Fa'19.
- **Blockchain for Lawyers.** Guest Lecturer, UC Berkeley Boalt. Spr'18.
- **EdX Blockchain Fundamentals.** Course Advisor, UC Berkeley. Spr'18.

University of Illinois at Urbana-Champaign

- **Intro to Programming for Engineers and Scientists.** CS101. Graduate Student Instructure, UIUC Department of Computer Science. Spr' 21. **Excellent Graduate Instructor Award.**

ACADEMIC HONORS AND FELLOWSHIPS

- NSF GRFP (5 years), 2021
- Excellent Graduate Student Instructor, UIUC, Spring 2021

PUBLICATIONS

Journal Papers in Review

Tournebize, R., **Chu, G.**, and Moorjani, P., "Inferring the History of Founder Events in Human Populations," Submitted to: Proceedings of the National Academy of Science. bioRxiv 2020.09.07.286450; doi: https://doi.org/10.1101/2020.09.07.286450.

Workshop Papers

Y. Wang, Sun J., Wang, X., Wei, Y., Wu, H., **Chu, G.**, Yu, Z., "Sperax: An Approach to Defeat Long Range Attacks in Blockchains," IEEE INFOCOM 2020 – IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPS), Toronto, ON, Canada, 2020, pp. 574-579. doi: 10.1109/INFOCOMWKSHPS50562.2020.9163036.

PRESENTATIONS

Conference Presentation, "MGDrive: Mosquito Gene Drive Explorer: Landscape Clustering," National Conference on Undergraduate Research, March 2020.

Retreat Presentation, "MGDrive: The Original Trilogy," UC Berkeley Computational Biology Retreat, October 2018.

Conference Presentation, "A Technical Overview of Blockchain Development," TiE Inflect Silicon Valley, April 2018.

COMMUNITY SERVICE

Shield the Bay
Co-Founder/Finance, Berkeley, March 2020 – Present

Berkeley ANova
Events Committee Chair, Berkeley, Sept 2016 – June 2018

COMPUTER SKILLS

Programming: Python, Java, C, Javascript, React, Redux, Solidity, Go, Jsonnet, Scala

Tools/Framework: HTML, Git, Django, Docker, AWS, Remix, CircleCI, Webpack, Jenkins, Kubernetes, Grafana

REFERENCES

Dr. Tandy Warnow, Professor
Department of Computer Science
University of Illinois, Urbana-Champaign
Email: warnow@illinois.edu

Dr. Priya Moorjani, Assistant Professor
Center for Computational Biology
University of California, Berkeley
Email: moorjani@berkeley.edu

Dr. Satish Rao, Professor
Electrical Engineering and Computer Science
University of California, Berkeley
Email: satishr@berkeley.edu

Dr. John Marshall, Assistant Professor
School of Public Health
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