

# ERICA CHIANG

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## EDUCATION

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<b>Cornell University</b> Ph.D. student in Computer Science	Aug 2023 - Present
<b>Carnegie Mellon University</b> B.S. in Computer Science, Minor in Human-Computer Interaction <i>Cumulative GPA: 3.95 / 4.0</i> <i>Phi Beta Kappa, University Honors, School of Computer Science College Honors</i>	Aug 2019 - May 2023

## AWARDS

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<b>NSF Graduate Research Fellowship</b>	2023
<b>Phi Beta Kappa</b>	2023
<b>Carnegie Mellon Senior Leadership Recognition Award</b>	2023
<b>Andrew Carnegie Society Scholar</b> <i>40 out of 2000 students selected for academic excellence and leadership</i>	2023
<b>Undergraduate Student Research Competition 2nd Place, ACM SIGCOMM</b>	2022
<b>Selected for Cornell, Maryland, Max Planck Pre-Doctoral Research School</b>	2022
<b>Johns Hopkins Applied Physics Laboratory Positive Influence Award</b> <i>1 out of 200 interns selected for exceptional performance and leadership</i>	2022


## PUBLICATIONS

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- SurgeProtector: Mitigating Temporal Algorithmic Complexity Attacks using Adversarial Scheduling**  
ACM Special Interest Group on Data Communication (SIGCOMM), 2023  
Nirav Atre, Hugo Sadok, **Erica Chiang**, Weina Wang, and Justine Sherry

## SELECTED POSTERS

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- Robust Heuristics: Attacks and Defenses on Job Size Estimation for WSJF Systems**  
ACM SIGCOMM Poster Session, 2023  
**Erica Chiang**, Nirav Atre, Hugo Sadok, Weina Wang, and Justine Sherry  
 *Runner-up of the ACM SIGCOMM '22 Undergraduate Student Research Competition*

## INTERNSHIPS & PROJECTS

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<b>Johns Hopkins Applied Physics Laboratory</b> , Computer Science Intern	Summer 2021
<i>Contributed to 2 projects. (1) Chief Digital and Artificial Intelligence Office aircraft readiness model: testing, evaluation, and benchmark model development; (2) Airborne Collision Avoidance System: designed and deployed a full stack web application for use in the development of ACAS software.</i>	

**NASA Jet Propulsion Laboratory, Software Engineer Intern** Summer 2021

*Developed software to monitor telemetry data traveling through NASA Deep Space Network and created an interactive webpage for visualizing and accessing the data in real time, intended for real world use on vehicles such as NASA Mars Perseverance Rover.*

**Framefit Workout App, Course Project** Spring 2020

*Created original wireframe body-tracker with movement analysis features, used analysis to generate custom workouts and provide feedback on exercise performance. One of top 11 projects (out of 500) selected for CMU term project showcase.*

## RESEARCH PROJECTS

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**Characterizing Social Media Narratives, CMU CASOS Lab** Sept 2022 - May 2023

*Senior Thesis Project, Advised by Prof. Kathleen Carley*

Analyzed Twitter data to identify patterns in the linguistic and psychological cues that different actors tend to use, in order to understand how this shapes their influence over online communities

**Robust Heuristics for Packet Job Size Estimation, CMU SNAP Lab** Sept 2021 - Aug 2022

*Advised by Profs. Justine Sherry and Weina Wang*

Led a project to explore the theoretical implications of using job size estimation heuristics in scheduling algorithms, to characterize heuristic quality and robustness in protecting systems against algorithmic complexity attacks (ACA)

**Adversarial Job Scheduling in Network Functions, CMU SNAP Lab** Jan 2021 - Sept 2021

*Advised by Profs. Justine Sherry and Weina Wang*

Studied packet-scheduling algorithms that mitigate the damage of algorithmic complexity attacks and ran simulations to compare the performance of multiple packet-scheduling algorithms

**Bias in ML Algorithms, CMU CHIMPS Lab** Aug 2020 - Dec 2020

*Advised by Profs. Jason Hong, Motahhare Eslami, Ken Holstein, Hong Shen*

Developed research questions and interview protocols to study how people search for, identify, and respond to bias in machine learning algorithms, with the goal of creating a crowd audit platform

## TEACHING & MENTORING

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**Research Mentor, CMU Research Mixer** Feb 2023

**Panelist, CMU Freshman Research Seminar** Dec 2022

**Mentor, CMU Society of Women Engineers Mentorship Program** Sept 2022 - May 2023

**Teaching Assistant, CMU School of Computer Science** Aug 2021 - Dec 2021

*15-151/21-158 (Mathematical Foundations for Computer Science): Taught two recitation sections per week and designed exercises for intuition and understanding, held weekly Office Hours, prepared & taught exam review sessions (to 200 students each time)*

**Orientation Counselor, CMU First-Year Orientation** Aug 2021

*Mentored 20 freshmen during their transition to college and throughout their first year at CMU, facilitated discussions about diversity, inclusivity, well-being, and identity*

**Physics Lab Educator, Oregon Museum of Science & Industry** Oct 2016 - Jul 2019

*Developed new lab demonstrations and experiments for museum visitors, worked with children to teach physics concepts through visual and interactive activities*

## EXTRACURRICULAR INVOLVEMENTS

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<b>CMU C# Choir</b> President (2021-22) Vice President Internal (2020-21) Design Chair (2019-20, 2022-23)	2019 - 2023
<b>CMU Sweepstakes (“Buggy”)</b> Women’s Push Captain (2022-23): <i>Recruit and lead team of runners to compete in annual Spring Carnival</i>	2019 - 2023
<b>CMU Taiwanese Students Association</b> Secretary (2021-22) Freshman Representative (2019-20)	2019 - 2023
<b>CMU Club Soccer Team &amp; Lake Oswego High School Varsity Soccer</b>	2015 - 2021
<b>Lake Oswego High School Student Government</b> Student Body Vice-President (2018-19)	2018 - 2019
<b>Lake Oswego High School Varsity &amp; Club Track and Field</b> Team Captain (2019) <i>Oregon Class 6A (largest division) All-State First Team x2</i> <i>High school record holder</i>	2015 - 2019

## SKILLS

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**Languages:** Proficient in C, Python, Java, SML, HTML, JavaScript, CSS; Intermediate in MATLAB, Arduino

**Art and Design:** [ericchiang.wixsite.com/website-1](http://ericchiang.wixsite.com/website-1)  
*National Scholastic Art Awards 2019: 1 Gold Key, 2 Silver Keys*