

# SHM GARANGANAO ALMEDA

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## Research Interests

Human-Computer Interaction, Generative Art, Creativity Support Tools, User Interface Design, Platform Design, Social Theory, User Experience

## Education

- 2020 – Present **University of California at Berkeley, Berkeley, CA**  
PhD. in Electrical Engineering Computer Science. GPA: 4.0  
Advisor: Björn Hartmann
- 2016 – 2020 **The College of New Jersey, Ewing Township NJ**  
B.S. in *Computer Science*, with minor in *Fine Art, cum laude*

## Experience

- 2020 – Present **University of California at Berkeley, Berkeley, CA**  
**Graduate Student Researcher with Björn Hartmann**  
Researching at the intersection of human computer interaction and art; Utilizing qualitative and quantitative user research skills to investigate the impact of emergent technologies such as generative / AI Art, decentralized marketplaces, content algorithms, and platform design on creative practices and communities.
- Jun 2022 – Aug 2022 **User Interface Design and Development Course Instructor**  
Used JavaScript, Node.js, front-end web development and HCI expertise to design original course material, lead and organize course staff, lecture, and mentor student groups in designing and implementing original web applications, conducting user-studies and using evaluation methods to iteratively prototype on original ideas to learn UI, UX, visual interface design, and human-computer-interaction fundamentals.
- Jun 2019 – Aug 2019 **Adobe Research Labs in San Jose, CA**  
**Computational Artistry Team Research Intern with Jose Echevarria & Stephen Diverdi**  
Implemented a novel parametric color-mixing model that emulates the behavior of physical pigments and produces unique effects that transcend existing color-blending technology. Developed bPigment, a graphical painting application using Python to demonstrate the novel color-mixing experience.
- Jan 2018 – May 2020 **The College of New Jersey, Ewing Township, NJ**  
**Accessible Sign Language Recognition with the Leap Motion Controller with Andrea Salgian**  
Communities that use visual languages to communicate are underrepresented by translation and language learning tools. Utilized the Python and C++ with the LeapMotion infrared hand-tracking controller to recognize and translate ASL fingerspelling.

- Jun 2018 **Algorithms for Protein Variant Library Design with Dimitris Papamichail**  
– May 2019 Developed an algorithm for optimizing oligonucleotide chain design to minimize the cost of synthesizing proteins. Implemented a web tool and an online database with results generated by our programs to make the algorithm accessible to a biology research team at Princeton.

2012 - Aug 2020 **Freelance Digital Artist**

## Patents & Publications

- 2023 **NFT Art World: The Lasting Impacts of Decentralization on the Development of Novel Creative Communities and Practices**  
Interviews with 16 creatives utilizing NFTs reveal a vast NFT Art World: cooperative networks developing novel creative practices, interactions, and communities with unique artistic subcultures.
- Nov 25, 2022 **Synthesis Cost-Optimal Targeted Mutant Protein Libraries**  
Under review for APBC 2023, The 21th Asia Pacific Bioinformatics Conference, arXiv preprint arXiv:2211.13898 (2022).
- Feb 16, 2021 **US10924633B1: RGB-based parametric color mixing system for digital painting**  
Techniques for parametric color mixing in a digital painting application. A methodology implementing techniques including generating a Bezier curve extending from a first point to a second point in a 3-Dimensional space.
- Feb 22, 2019 **Accessible American Sign Language Recognition with the Leap Motion Controller** SIGCSE '19: Proceedings of the 50th ACM Technical Symposium on Computer Science Education, doi: 10.1145/3287324.3293718

## Fellowships & Honors

- 2022 Keynote Speaker at the Queer, Trans (QT) Black, Indigenous, People of Color (BIPOC) Participatory Design (PD) Workshop at CHI 2022
- 2020 Outstanding Graduate Student Instructor Award
- 2019-2020 Chancellor's Fellowship for Graduate Study
- 2020 Upsilon Pi Epsilon, The Computer Science Honors Society Chapter President
- 2018, 2019 The Charles H. Goldberg-Norman Neff Award
- 2016, 2017 TCNJ CS Department Service Award
- 2019 TCNJ CS Department Award
- 2019 Adobe Research Women-in-Technology Scholar
- 2019 1st Place ACM Student Research Competition at SIGCSE for *Accessible Sign Language Recognition with the Leap Motion Controller*
- 2019 Computing Research Association for Widening Participation (CRA-WP) Grace Hopper Scholar

- 2018 Phi Kappa Phi Research Award
- 2018 Anita Borg Foundation Grace Hopper Scholar
- 2018 CRA-WP Collaborative Research Experience for Undergraduates Program Fellow supported by the NSF

## Teaching

- UC Berkeley CS160: *User Interface Design & Development*  
 Summer 2022 Course Instructor  
 Co-teacher: Diyah Mettupalli; Head TA Timothy Yang
- UC Berkeley CS160: *User Interface Design & Development*  
 Spring 2022, Head Teaching Assistant,  
 Summer 2021, Disability Support Program Point of Contact  
 Spring 2023
- TCNJ 2017 - 2019 Peer Tutor, Computer Science, Math & Science

## Advising

- Fall 2022 Ace Chen, Pradeep Saravana Rathnam, Isabel Li, Timothy Yang  
 - Present

## Leadership and Service

- 2022 - Present House Rabbit Society Volunteer
- UC Berkeley Computer Science Graduate Student Association
- 2020 - Present Officer, Visit Day Coordinator
- TCNJ Diversity and Inclusion Group in Tech for All (DIGIT.all)  
 2019 - 2020 President
- Fall 2017 Association for Computing Machinery (ACM) Student Chapter  
 - Spring 2020 Executive Board, Outreach Chair, Vice President
- Fall 2017 Barkada (Filipino Cultural Association)  
 - Spring 2020 General Board Member, Mentor, Graphic Designer
- Fall 2017 The Society for Creative Endeavors (Multimedia Club)  
 - Spring 2020 General Board Member, Graphic Designer
- 2017, 2018, 2019, HackTCNJ (Annual Hackathon)  
 2020 Organizer, Executive Board Member