VERONICA RIVERA

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Research Interests: I study, design, and develop socio-technical systems to support learning and career development in online platforms using a combination of qualitative methods, human-subject experiments and user studies. My areas of interest span Human-Computer Interaction, Social Computing, Computer-Supported Cooperative Work, and Learning Sciences. In future projects I am also interested in exploring machine learning applications to education and work, and algorithmic fairness of such systems.

EDUCATION

University of California, Santa Cruz | School of Engineering **Santa Cruz, CA**
Ph.D., Computational Media *2017-2023 (Expected)*
Advisor: David Lee

Harvey Mudd College **Claremont, CA**
B.S., Joint Computer Science and Mathematics; Psychology Concentration *2017*
President's Scholar

RESEARCH EXPERIENCE

Graduate Researcher **Santa Cruz, CA**
Tech4Good Lab, UC Santa Cruz *2019-*
- Advisor: David Lee
- Role: Researching 1) career development in online on-demand labor platforms and 2) learning in socio-technical educational systems
  - Conducting interviews with workers on Amazon Mechancial Turk to understand the career challenges faced by workers in online on-demand labor platforms
  - Carrying out usability tests and learning experiments of a platform that teaches beginning computer science students web development as they contribute to real-world projects (Causeway). Studying how to scale apprenticeship learning and mentorship using this platform.
  - Significant project management experience leading teams of undergraduate students in user interviews, usability studies, qualitative analysis, data analytics (python) and literature review for the above projects.

Graduate Researcher **Santa Cruz, CA**
ASSIST Lab, UC Santa Cruz *2017-2018*
- Advisor: Sri Kurniawan (advisor & lab change in Jan.2019)
- Role: Researching educational classroom tools to support elementary school children with Austism Spectrum Disorder
  - Conducted elementary school classroom observations and interviews with educators to understand the role of technology in special education classrooms
  - Mentored 1 undergraduate student in designing a prototype for a social skills development game using Figma.

Undergraduate Clinic Researcher **Claremont, CA**
Harvey Mudd College Computer Science Department *2016-2017*
- Advisor: Lisa Kaczmarczyk and the MITRE Corporation
- Role: Researching ways to make it more difficult for facial recognition algorithms to recognize unwanted individuals in an image, in an attempt to make facial recognition systems more secure. Completed collaboratively in a team of 4 students for our senior capstone project.
  - Developed image de-identification algorithm that makes it harder for Local Binary Patterns and Dlib Deep Learning facial recognition algorithms to recognize an individual in a photo.
  - Worked with client and other industry stakeholders to meet needs and expectations.

Undergraduate Researcher **Claremont, CA**
Harvey Mudd College Computer Science Department *Summer 2015*

- Advisor: Zachary Dodds
- Role: Researching the strengths and drawbacks of the Matterport 3D camera for robotic spatial reasoning.
  - Wrote python script to compare images using OpenCV
  - Created graphical simulations of a robot's location within a 3D enviornment in Unity.
  - Created a camera-image matching system for image comparison.

High School/Undergraduate Researcher **Claremont, CA**
Claremont McKenna College Mathematics Department *2011-2015*

- Advisor: Sam Nelson
- Role: Self-studying topological knot theory and researching various ways of defining knot invariants, including involutory biracks and biquandle brackets.
  - Created link diagrams and wrote the Gauss code and Alexander-Conway Polynomial for each link diagram
  - Wrote MatLab script to construct biquandle brackets
  - Improved existing python code to compute skein invariants

PUBLICATIONS

Journal Papers

[j2] Nelson, Sam., Orrison, Michael.,**Rivera, Veronica**. (2017). Quantum Enhancements and Biquandle Brackets. *The Journal of Knot Theory and its Ramifications*, 26(5).

[j1] Nelson, Sam., **Rivera, Veronica**. (2014). Quantum Enhancements of Involutory Birack Counting Invariants. *The Journal of Knot Theory and its Ramifications*, 23(7).

Conference Papers

[c1] Tenorio, D., **Rivera, V**., Medina, J., Leondar, A., Gaumer, M., Dodds, Z. (2015). Visual Autonomy via 2D Matching in Rendered 3D Models. In *Proceedings of the 11th International Symposium on Visual Computing* (ISVC 2015)(pp.373-385).

Workshop and Consortia Papers

[w2] **Rivera, Veronica**., Lee, David. (2019). It Takes a Village to Change Jobs: Towards Workplace Relationships that Support Reskilling in Crowdwork. In *The Future of Work(places): Creating a Sense of Place for On-Demand Work*. Workshop conducted at the Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2019).

[w1] **Rivera, Veronica**. (2018). A New Approach to Testing Children with Autism Spectrum Disorders Using Affect. In *Proceedings of the 14th International Conference on Intelligent Tutoring Systems* (ITS 2018).

TEACHING AND MENTORING

Teaching

Teaching Assistant **Santa Cruz, CA**
UC Santa Cruz, School of Engineering *Fall 2018*

- Course: CMPS 12A Introduction to Programming, Accelerated
- Instructor: Narges Norouzi
- Responsibilities: Held weekly office hours, led lab section, graded exams and assignments, oversaw undergraduate course tutors

Teaching Assistant **Santa Cruz, CA**
UC Santa Cruz, School of Engineering *Spring 2018*

- Course: CMPS 5J Introduction to Programming in Java
- Instructor: Dustin Adams
- Responsibilities: Held weekly office hours, led lab section, graded assignments, met weekly with course staff to discuss student progress

Teaching Assistant **Santa Cruz, CA**
UC Santa Cruz, School of Engineering *Winter 2018*

- Course: CMPS 5J Introduction to Programming in Java
- Instructor: Dustin Adams
- Responsibilities: Held weekly office hours, led lab section, graded assignments, met weekly with course staff to discuss student progress

Undergraduate Research Mentoring

- **Data Analytics:** Sonia Atre, Sonali Malik, Deeksha Manjunath, Victoria Shu
- **Qualitative Research:** Jason Chan, Colin Chen, Elizabeth Dinh, Ana Guo, Gurdikhia Kaur, Taylor Mcpherson, Aitanna Parker, Puja Vasan, Melanie Wong
- **UX Research:** Taylor Mcpherson, Aidan Nguyen

AWARDS AND ACHIEVEMENTS

2019 UC Santa Cruz Chancellor's Graduate Internship Fellowship (1 of 5 recipients)
2019 Invited to The White House to attend The JobKit Developers Conference
2019 Invited member of the Human-Computer Interaction Consortium on the Futures of Work
2019 Full Travel Scholarship to the 2019 CRA Grad Cohort Workshop for Women
2019 Full Travel Scholarship to the 2019 CRA-URMD Grad Cohort Workshop
2018 UC Santa Cruz Summer 2018 Regent's Fellowship
2013 Harvey Mudd College 4-Year Full-Tuition President's Scholarship (1 of 8 recipients)

SKILLS

- **UX Research:** Semi-structured interviewing, experiment design, think-aloud protocol, participant observations, usability testing, qualitative coding methods (e.g., thematic analysis, grounded theory), participant recruitment, paper prototyping, high-fidelity prototyping, user-centered design
- **Development:** Python, Java, JavaScript, HTML/CSS, Objective-C
- **Languages:** Spanish (Native speaker), English, French (conversational)

SERVICE

2019 Reviewer for CSCW 2020
2019 Reviewer for the Human-Computer Interaction Journal
2018 Harvey Mudd College Alumni Admission Interviewer
2018 UC Santa Cruz Computational Media Graduate Student Mentor

SELECTED PRESS

2019 **Harvey Mudd College Magazine, Summer 2019**. "New Tech Assists Learning"