Veronica Rivera

Education

2017– **Ph.D., Computational Media**, *University of California Santa Cruz, School of Engineering*, Santa Cruz, CA, .
Primary Advisor: Sri Kurniawan
ASSIST Lab

2013–2017 **B.S., Joint Computer Science and Mathematics**, *Harvey Mudd College*, Claremont, CA, .
Concentration in Psychology
4-year Full Tuition President's Scholarship (Aug.2013–May 2017)

Experience

Research Projects

Sep.2017– **Assistive Technology for Individuals with Autism**, *UC Santa Cruz*.
My work focuses on creating adaptive, interactive and personalized technology for education, collaboration and social interaction of students with Autism Spectrum Disorders (ASD). Member of the ASSIST lab.
- Working on designing a tablet application for building group work skills in students with ASD
- Collaborating on a game to help adolescents with ASD practice social skills with the Carnegie Mellon University Entertainment Technology Center

2016–2017 **Image De-Identification**, *Harvey Mudd College*.
This project was sponsored by the MITRE Corporation as part of the Harvey Mudd College Computer Science Clinic Program. In collaboration with 3 students.
- Developed an 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.
- Created blur algorithm that uses OpenCV's averaging blur filter and Dlib's face detector to randomly blur facial images.

2015 **Quantum Enhancements and Biquandle Brackets**, *Claremont McKenna College*.
In collaboration with Professor Sam Nelson (Claremont McKenna College) and Professor Michael Orrison (Harvey Mudd College).
- Defined knot invariants using biquandle brackets, wrote a MatLab script to construct biquandle brackets and improved existing python code to compute skein invariants of uncolored knot diagrams by collecting all smoothings of the diagram simultaneously.

Summer 2015 **Visual Autonomy via 2D Matching in Rendered 3D Models**, *Harvey Mudd College*.
In collaboration with 4 students and Professor Zachary Dodds. Summer REU project
- Wrote a program in python to compare an image against a given database of images using a color histogram comparison method.
- Worked with Unity 3D to create graphical simulations of a robot's location within a 3D environment.
- Created a camera-image matching system that takes in image input from a robot's camera and compares that image to a database of 2D images rendered from a 3D model of the room.
- Presented work at the 11th International Symposium on Visual Computing in Las Vegas Nevada in December 2015

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2011–2013 **Quantum Enhancements of Involutory Birack Counting Invariants**, *Claremont McKenna College*.

In collaboration with Professor Sam Nelson.

- Studied how involutory biracks can be used as invariants to tell whether two knots are the same under a set of birack-labelled framed Reidemeister moves.
- Created link diagrams and labeled crossings of all knots with up to 8 crossings utilizing the Rolfsen Knot Table and wrote the Gauss code and Alexander-Conway Polynomial for each.

Industry

Summer 2014 **Facebook University (FBU) Intern**, *Facebook*.

- Completed comprehensive 2-week Objective-C and iOS development training.
- Created a pun generator iPhone application that allows users to view randomly generated puns from different categories and save their favorite puns onto their device.
- Collaborated with two interns to develop a carpooling iPhone application that allows users to set up carpool rides and join other users' rides using their current location.

Conference and Journal Publications

1. **Rivera, Veronica**.(2018).A New Approach to Testing Children With Autism Spectrum Disorder Using Affect. In *Proceedings of the 14th International Conference on Intelligent Tutoring Systems* (ITS 2018)(pp.496-498).
2. Nelson, Sam., Orrison, Michael., **Rivera,Veronica**.(2017).Quantum Enhancements and Biquandle Brackets.*The Journal of Knot Theory and its Ramifications*, 26(5).
3. 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).
4. Nelson, Sam., **Rivera,Veronica**.(2014).Quantum Enhancements of Involutory Birack Counting Invariants.*The Journal of Knot Theory and its Ramifications*, 23(7).

Teaching

Graduate Teaching Assistant

Fall 2018 **Introduction to Programming, Accelerated (CMPS 12A)**, *UC Santa Cruz*.
Hold weekly office hours, lead lab section, grade exams, oversee undergraduate tutors

Spring 2018 **Introduction to Programming in Java (CMPS 5J)**, *UC Santa Cruz*.
Held weekly office hours, led lab section

Winter 2018 **Introduction to Programming in Java (CMPS 5J)**, *UC Santa Cruz*.
Held weekly office hours, led lab section

Grader/Tutor

Fall 2014 **Introduction to Programming**, *Harvey Mudd College*.
Held weekly tutoring hours and graded assignments. Course taught in Python

Skills

Technical

Proficient Python, Java, Objective-C, JavaScript/HTML

Intermediate C, C++

Language

Fluent Spanish (Native speaker), English

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Conversational French

Service

2018- Harvey Mudd College Alumni Admission Ambassador

Membership

2018- Association for Computing Machinery (ACM)

2018- ACM SIGCHI

Relevant Coursework

Graduate

Computer Graphics (In progress), Immersive Analytics (In progress), Advanced Visualization, Computational Media Methods, Computational Media Research, Social and Emotional Approaches to Human-Computer Interaction, Introduction to Computational Media, User Evaluation of Technology, Human-Computer Interaction Seminar

Undergraduate

Advanced Topics in Operations Research, Intermediate Probability, Programming Languages, Algorithms, Abstract Algebra I, Software Development, Computability and Logic, Real Analysis I, Robotics Lab, Computer Systems, Discrete Mathematics, Data Structures and Program Development, Introduction to Psychology, Psychology of Close Relationships, Abnormal Psychology, Neuropsychology

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