

# Alan Peral

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RESEARCH INTERESTS	Human Computation, Crowdsourcing and Collaboration, Data Visualization, CS Education	
EDUCATION	<b>University of California, Santa Cruz</b> <i>Ph.D. Student in Computer Science</i>	
	<b>Pomona College</b> , Claremont, CA <i>B.A. in Mathematics, Computer Science Minor</i>	<b>May 2018</b>
	<b>Thesis:</b> Land Use Planning with a Multiobjective Optimization Method	
PROJECTS AND RESEARCH	<b>Implementing Image Style Transfer for 3D Face Scans</b>	<b>November – December 2018</b>
	<ul style="list-style-type: none"><li>• Used PyTorch to implement a neural algorithm of artistic style for 3D face scans</li><li>• System allows user to scan their face using the Bellus3D app/camera, select a style image to apply, and then transform the scan of their face into the style of the provided image</li></ul>	
	<b>Exploring Alternative Modes of Storytelling</b>	<b>March – May 2018</b>
	<ul style="list-style-type: none"><li>• Wrote and illustrated a children's story book with Photoshop</li><li>• Used Unity and the Vuforia SDK to develop an Augmented Reality companion application for the children's book</li></ul>	
	<b>Visualizing the Effects of Armed Conflicts</b>	<b>November – December 2017</b>
	<ul style="list-style-type: none"><li>• Built analysis and visualization tool with R and Shiny and the UCDP/PRIO Armed Conflict Dataset and socioeconomic indicator data from the WorldBank</li><li>• Vis tool displays network of conflicts between nations, the effect of said conflicts on various socioeconomic indicators in a nation (literacy rate, life expectancy, etc), and the prevalence of conflict in the Third World.</li></ul>	
	<b>Pomona College Mathematics Research Circle</b>	<b>January – May 2016</b>
	<ul style="list-style-type: none"><li>• Investigated properties of the divisor lattice: in particular, examined the width of the largest cutset in the divisor lattice</li><li>• Found several counterexamples to existing conjectures about the width of cutsets and consequently formulated new conjectures about it</li></ul>	
	<b>Pomona Summer Undergraduate Research Program</b>	<b>June – August 2015</b>
CONFERENCE PRESENTATIONS	<ul style="list-style-type: none"><li>• Conducted research on the dissemination of knowledge throughout the middle east and Europe in the medieval period</li><li>• Studied the works of three early prominent mathematicians- Abū-Kāmil, al-Khwārizmī(latinized as Algorithmi), and Leonardo Pisano (Fibonacci) - and found striking similarities between their texts</li></ul>	
	Peral Ortiz, A (2016, August). "Search Engine Development" Oral presentation delivered at an annual Google undergraduate research symposium, Sunnyvale, CA.	
	Peral Ortiz, A (2015, September). "3 Mathematicians, 400 Years, 1 Tradition" Oral presentation delivered at the annual Pomona College Poster Conference, Claremont, CA.	
EXPERIENCE	<b>Computer Science Department, UCSC</b>	<b>September 2018 – Present</b>
	<i>Graduate Teaching Assistant</i> <ul style="list-style-type: none"><li>• Serve as TA for undergraduate course CMPS101: "Algorithms and Abstract Data Types"<ul style="list-style-type: none"><li>– Hold weekly lab sections and office hours for over 80 students.</li><li>– Grade weekly programming assignments, as well as midterm exams and final exam</li></ul></li></ul>	

- Served as TA for upper division undergraduate course CMPS185: “Technical Writing in Computer Science”.
  - Graded weekly technical assignments, held weekly office hours.

**Qualitative Skills Center**, Pomona College  
*Math Tutor*

**Feb – May 2018**

- Organized and led tutoring sessions for students that needed additional support in a variety of mathematics courses, including Calculus, Statistics, Probability, and Operations Research.

**Computer Science Department**, Pomona College  
**Math Department**  
*Undergraduate Teaching Assistant*

**September 2016 – May 2018**

- TA for an upper division mathematics course Math 187: Deterministic Operations Research. Held weekly tutoring sections for over 50 students.
- TA for CS51: Introduction to Computer Science. Held weekly lab sections for 50 students.
- Worked as a grader for mathematics course Math 103: Combinatorics. Graded weekly homework assignments for 30 students.
- TA for Math 31H: Honors Topics in Calculus II. Held weekly tutoring sections for 30 students.

**WunderTec**, Mexico City  
*Web Developer Intern*

**June 2016 – Aug 2016**

- Built enterprise software to handle every aspect of clients’ business operations, including project management, online payment processing, automated billing systems, IT service management, and customer relationship management

## ACTIVITIES

**Student of Color Alliance**  
*Executive Board Member*

**August 2017 - May 2018**

- Managed budget of several thousand dollars and organized social and educational events around student of color support and safety
- Facilitated dialogue between college administrators and students of color to produce actionable policy implementation

**Chiapas Support Committee**  
*Organizer*

**August 2016 - May 2018**

- Helped establish transnational connections amongst social movements and university campuses by organizing speaker events, international delegations, and political education workshops.

**Pomona College Housing and Residence Life**  
*Resident Assistant*

**May 2015 – May 2016**

- Functioned as the first point of contact for all needs of hall residents with the goal of establishing a positive living environment.
- Responsible for assisting with security, addressing emergencies, coordinating campus-wide activities, counseling, and enforcing college policies.

## SKILLS

*Programming/Markup Languages:* Python, Java, JavaScript, R, HTML, CSS, L<sup>A</sup>T<sub>E</sub>X  
*Frameworks/Libraries:* jQuery, AngularJS, Bootstrap  
*Languages:* Spanish, French

## RELEVANT COURSEWORK

### Graduate

Artificial Intelligence, Advanced Visualization, Social Computing, Computer Graphics, Algorithms

### Undergraduate

Operations Research, Data Structures and Advanced Programming, Machine Learning, Computational Statistics, Probability