Alan Peral

CONTACT INFORMATION

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EDUCATION

University of California, Santa Cruz
M.S. in Computer Science **Expected June 2019**

Pomona College, Claremont, CA
B.A. in Mathematics, Computer Science Minor **May 2018**

Relevant Coursework
Artificial Intelligence, Advanced Visualization, Social Computing, Computer Graphics, Algorithms, Operations Research, Machine Learning, Computational Statistics, Probability

SKILLS

Programming/Markup Languages: Python, Java, JavaScript, R, HTML, CSS, LaTeX
Frameworks/Libraries: jQuery, AngularJS, Bootstrap
Languages: Spanish, French

PROJECTS

Predicting Biker Density at Bikeshare Stations in San Francisco **April – June 2019**
Used usage data from the Ford GoBike bikeshare program in San Francisco to train predictive, generalizable models to forecast biker density for any given hour at high usage stations in SF. Achieved a high test accuracy to demonstrate the reliability of our predictions. Developed a map-based visualization to synthesize our predictions with bicycle collision data provided by the California Highway Patrol, in order to draw increased attention to the issue of bike safety on our roads.
Published our paper in the IEEE Global Humanitarian Tech Conference 2019 proceedings.

DocuVis: Interactive Document Clustering and Visualization **January – March 2019**
Developed an interactive visualization system for document clustering and organization, using a force-directed graph to visualize topic clusters based on the Latent Dirichlet Allocation topic model analysis method and the D3 visualization package.

Implementing Image Style Transfer for 3D Face Scans **November – December 2019**
Used PyTorch to implement a neural algorithm of artistic style for 3D face scans, allowing a user to scan their face using the Bellus3D app or camera, choose a style image, and apply the texture from the chosen image to to their face.

Visualizing the Effects of Armed Conflicts **November – December 2017**
Used the UCDP/PRIO Armed Conflict Dataset and socioeconomic indicator data from the World-Bank to build an analysis and visualization tool with R and Shiny that displays the network of conflicts between nations, the effect of conflicts on various socioeconomic indicators in a nation, and the prevalence of conflict in the Global South.

EXPERIENCE

Cadence Design Systems
R&D Graduate Internship **June – September 2019**
Led a project to develop a visualization tool for the Spectre electrothermal co-simulation Cadence platform. Helped develop unique file format to store simulation data to facilitate visualization and simulation processes. The final interactive visualization tool displayed and animated temperature and power data for hundreds of thousands of data points in any chip simulation.

Computer Science Department, UCSC
Graduate Teaching Assistant **September 2018 – Present**
Have worked with hundreds of undergraduate students across several computer science courses: Algorithms and Abstract Data Types, Introduction to Data Structures, Technical Writing in Computer Science, Starting a New Technology Company, and Business Strategy and Information Systems.

CS/Math Department, Pomona College
Undergraduate Teaching Assistant **September 2016 – May 2018**
Worked with students in three distinct courses: Introduction to Computer Science, Deterministic Operations Research, and Honors Topics in Calculus II.