

Hannah E. Wolfe  
projectiveplanes.com  
wolfe@mat.ucsb.edu

## EDUCATION

### **University of California, Santa Barbara** **2012–Present**

Master's Degree in Computer Science (Completion: Summer 2017) GPA: 3.86

Master's Degree in Media Arts and Technology (Completed: Winter 2016) GPA: 4.00

PhD Student in Media Arts and Technology (Expected Completion: Summer 2018)

- **Dean's Fellow 2012**
- **Mosher Foundation Fellow 2014 and 2015**
- **Deutsch Foundation Fellow 2016**
- **MAT Master's Project:** This was an exploration of emotive reactive systems through the design of ROVER the Reactive Observant Vacuous Emotive Robot, an interactive sculpture and experimental platform for human-robotic interaction. I explored the effect of active embodied interaction on emotive expressive responses to algorithmically generated non-linguistic utterances.
- **Student Representative** **June 2013– June 2014**  
I represented the graduate students in my department's interests and concerns to the Department Chair and Graduate Student Advisor. I was part of the hiring committee for the new robotics professor. I also organized events and socials in the department.
- **Research Interests:** Human Computer Interaction, Robotics, Affective Computing, Augmented Reality, Computer Vision, Machine Learning, Physical Computing, Data Analysis and Visualization
- **Relevant Coursework:** Computer Graphics (CS180), Physically-Based Simulation and Animation (CS 290I), Augmented Reality (CS290I), Machine Learning and Data Mining (CS 291K), Data Driven Networking and Systems Design (CS293N), Computing with Media Data, Media Signal Processing

### **Bennington College, Bennington VT** **2005–2009**

B.A. in Liberal Arts, concentration in Visual Arts GPA: 3.54

- **Student Educational Policy Committee Member** **Sept. 2008– June 2009**  
Advised the administration about student views on academic issues, met with faculty within my discipline, served as a liaison between the administration and the student body, organized events.
- **Augmented Library Bookmarks Project** **Sept. 2007-June 2008**  
Programmed hexagon animations and bookmark/interface communication.  
<http://robertransick.com/bookmarks/>  
This project won 3<sup>rd</sup> Place in Cooper-Hewitt's People's Design Award in 2008
- **Telemetry Project** **Jan. 2009-June 2009**  
Designed self-contained microcomputer-based sensors and deployed them in remote environments.

## SKILLS

**Programming Languages:** C, C++, C#, SQL, Python, Ruby, MAXMSP, Processing, HTML5, CSS3, JavaScript, MATLAB, PHP

**APIs/Frameworks:** Django, Ruby on Rails, Arduino, OpenGL, Silverlight, Telerik, ASP.NET

## **EXPERIENCE**

### **Graduate Student Researcher, UCSB**

***March 2014 to Present***

- I am working with the AlloSphere Research Group. The Allosphere is a Large-scale Immersive Laboratory for visualization and research.
- As a Mosher Foundation Fellow, I worked with Dos Pueblos High School Engineering Academy on their Senior Capstone Mechatronics Projects and Santa Barbara High School Computer Science Academy (SBHS-CSA) to bring Art and Computer Science into local high school curriculum. At DPEA, I worked with staff to build and implement a computer science curriculum for their senior capstone Mechatronics project. We built the “Carousel of Physics” which has been shown at the 2015 Maker Faire and Santa Barbara Museum of Art. At SBHS-CSA, I worked with the director and an instructor, to define their mission statement, review their curriculum, define their goals for a new course and find future directions. We worked with physics teachers to find where computer science could be integrated into the physics curriculum.
- I have worked with the AlloSphere research group to host tours of the AlloSphere for local high school students.
- I worked on a Transmission Electron Microscope and Atom Probe dataset alignment application, building an iPad interface to move and change display settings of the datasets.
- I worked on an animation project simulating a medical device’s effect on the blood stream. This project was implemented in Maya and After Effects.

### **Teaching Associate, UCSB**

***June – August 2017***

Designed and taught a college level class "Data-Driven Research – Creative Problem Solving with Python" for the UCSB's Science & Engineering Research Academy (SERA). In this class students learned how to apply machine learning techniques to large datasets using Python.

### **Teaching Assistant/Grader, UCSB**

***March 2013 to December 2014***

- **Fall 2014** I was a teaching assistant for Art and Technology (MAT 200A). This class is an introduction to the history of art and technology starting in the 1960’s to the present. I lectured when the professor was unavailable, helped students organize collaborative projects, organized the student email list and set-up and managed the course wiki.
- **Summer 2014** I was a teaching assistant for Introductory Physics B Lab (Physics 6BL). This class is the laboratory portion of the second class of the introductory physics series. For each class I prepared a short lecture on the physics behind the lab and how to complete it. I helped students complete the lab, answered questions, graded labs and exams, and monitored the lab for safety protocol issues. I also held office hours in the Physics Study Room, helping students with any questions they had with their homework.
- **Spring 2014** I was a teaching assistant for Digital Media Arts Strategies (Art 22). This class is an introduction to web development including HTML5, CSS3 and Javascript. I wrote and taught tutorials on Javascript, Illustrator and web development. I worked with students individually on solving problems with their code.
- **Winter 2014** I was a teaching assistant for Introduction to Contemporary Practices III: Art Science and Technologies (Art 7D). I lead discussions critiques and taught HTML5, CSS3, and Arduino. I met with students for each assignment one on one to help further their artistic vision. I graded student’s work, participation and reading responses.

- **Fall 2013** I was a grader for Astronomy 1, where I was responsible for grading 270 students weekly homework assignments and entering them in an excel spreadsheet.
- **Spring 2013**, I was a teaching assistant for Introduction to the Machine Shop (ME 13S). I taught students how to use the lathe, mill and band saws. I made sure the students are safe and answered any questions they have about the machines. I also graded tests and quizzes.

**Instructor, iD Tech Programming Academy UCLA**

**July 2014**

- I taught HTML5, CSS3, Javascript and PHP.
- I prepared lesson plans, and taught a class with 4 students ensuring all students met set curriculum goals.
- I applied behavior management techniques to enforce rules and safety regulations, monitored them during meal times, escorted them between locations, and planned and participated in indoor and outdoor activities for students.

**Programmer/Analyst, SunEdison – San Francisco, CA**

**Jan. 2010 to June 2012**

SunEdison is the leading solar energy services company in North America, and as of 2012, managed nearly 400 megawatts of distributed photovoltaic generating capacity throughout North America, Europe, and South Asia. As part of the Software R&D team, my major projects included the following:

**Solar Operations Dashboard (SOD)**

SOD is the solar monitoring, alerting, asset tracking, and service ticketing web application used to manage nearly 600 power plants from SunEdison's several Renewable Operations Centers around the world. It is the primary tool used by SunEdison engineers for troubleshooting performance issues and managing service for the power plant fleet. My specific contributions were as follows:

- Designed and implemented the SOD Analysis Tool, which allows SunEdison engineers to analyze performance and outage data from solar power plants using a collection of advanced visualization and data manipulation tools. Among other functions, the Analysis Tool is also used to create commentaries on outage events for reports provided to portfolio investors.
- Designed the advanced Inverter-Combiner-String drill-down rapid diagnostic interface
- Designed and implemented the Asset Tracking UI
- Designed and implemented the User Role Editor
- Wrote release notes, maintained the wiki, and created training videos

**Mobile Service Client (MSC)**

MSC is a service ticket information management and automated time tracking application for SunEdison Field Service Technicians. In addition to providing the point of access for service-related information both with and without a wireless connection, MSC serves as both the data collection tool for SunEdison's Continuous Improvement Program, and for automated logging of timesheet information for relay to a payroll system.

My contributions were as follows:

- Designed and implemented the client from initial user interface design to deployment

- Designed and implemented the automated syncing procedure between the application and our database, and between our database and a 3rd party payroll system (ADP)
- Worked with clients post initial release to gather requirements for new features
- Wrote release notes and the user manual

**SolarAid** – Web application for engineers to more efficiently report outage information.

- Designed the look and feel and implemented the user interface.
- Although the application initially used Analytica Decision Engine, I modified the application to use a MySQL database filled with data cached from Analytica to improve performance

**Home Connect** – SunEdison’s residential customer website.

- Integrated the designers’ code and used their design as a template for other pages.

#### **Miscellaneous projects**

- Implemented, maintained and QA'd internal and external SQL Server Reporting Services applications for billing, invoicing, monetization, ticketing, alerting, site performance and production
- Managed the migration of our reporting services from Windows Server 2005 to 2008 R2. (Tools used: SQL Server Reporting Services 2005, 2008)
- Created the design for the look-and-feel of Partner Portal, our partner-facing website. (Tools used: Illustrator, GIMP, Inkscape)
- Redesigned the look and feel and implemented the banner, navigation, and home screen for the Tariff and Rate Engine for Energy Services (TREES), SunEdison’s billing, contract, and tariff management application (Tools used: SQL Server 2008, Microsoft Visual Studio 2008, ASP.NET 3.5)
- Edited product material, release notes, user manuals, grant proposals and Site Quality Inspection forms
- Deconstructed utility tariffs from utilities to Excel models allowing monetization of interval usage and solar production data

#### **Crossett Library – Bennington College, Bennington, VT**

**January–June 2009**

Worked at the circulation desk, helped patrons with issues, shelved and catalogued books, and wrote for the library newsletter.

#### **Student Center Snack Bar – Bennington College, Bennington, VT**

**Feb. 2006–June 2009**

As a student manager, I opened and closed the snack bar, ran the cash register, trained new employees, and was a short order cook for students and faculty.

#### **MAACO Collision Repair and Auto Painting – Fairfax, VA**

**Summer 2008**

I worked with customers on the phone and in person, and processed payments for car repairs. I organized a full year of accounting data for tax purposes.

#### **Yeshiva of Greater Washington – Kensington, MD**

**December 2007–February 2008**

I was a substitute teacher for 7<sup>th</sup> to 11<sup>th</sup> grade students.

**Animal Exchange – Rockville, MD****2002–2007**

As an assistant manager, I ran the store when the owner was away. I assisted customers with choosing the right pet, took care of the animals, worked the cash register, answered phones and helped train new employees.

**VOLUNTEER EXPERIENCE****Yeshiva of Greater Washington – Kensington, MD****December 2007–February 2008**

I volunteered in the library cataloguing books and monitoring the circulation desk.

**McLean Mental Hospital – Belmont, MA****Winter 2007**

As an intern I sat in on patient interviews for a clinical trial of the effects of taurine on bipolar patients and entered the data from interviews and surveys. I also did independent research on the relationship between bipolar disorder and creativity.

**OASIS Gallery – Harrisonburg, VA****December 2005-February 2006**

As a student intern, I created and maintained an inventory system, rearranged the layout of the gallery to make it more customer-friendly, participated in the board meetings, assisted customers, and made sales. Outside the gallery, I was a teacher's aid for an artist's class.

**RESEARCH**

Rosli, MHW., Yerkes, K., Wood, T., Wolfe, H., Roberts, C., Haron, A., Estrada F., & Wright, M. "Ensemble Feedback Instruments." *Proceedings of the International Conference on New Interfaces for Musical Expression* (Edgar Berdahl, Jesse Allison, eds.), Louisiana State University, 2015.

**PERFORMANCES/EXHIBITIONS**

- International Symposium of Electronic Arts, Manizales Colombia, June 2017
- Re-habitation, EoYS, University of California Santa Barbara, May 2017
- White Noise, EoYS, University of California Santa Barbara, May 2016
- CREATE AlloSphere Spatial Sound Concert, University of California Santa Barbara, February 2016
- Open Sources, EoYS, University of California Santa Barbara, May 2015
- Karlsruhe HFG Opening Ceremony, Karlsruhe Germany, October 2015
- New Interfaces for Musical Expression Performance, Louisiana State University Baton Rouge, June 2015
- End of Year Show Performance, University of California Santa Barbara, May 2015
- CREATE Concert, University of California Santa Barbara, April 2015
- Imagining the Universe - Music, Spirituality, and Tradition - Network Concert, University of California Santa Barbara and Stanford University, November 2014
- CREATE Concert, University of California Santa Barbara, November 2014
- End of Year Show, University of California Santa Barbara, May 2014
- Shadows in Space, EoYS, University of California Santa Barbara, May 2013