

Zachary Gima

1531 Alcatraz Ave, Unit 3
Berkeley, CA 94703
314.853.0021 | ztakeo@berkeley.edu

EDUCATION

University of California, Berkeley

MS/PhD Student, Mechanical Engineering

Advisor: Prof. Paul K. Wright, GPA: 3.89

Research Focus: Energy storage and harvesting materials; energy control systems

Berkeley, CA

Expected 2019

University of Southern California

Bachelor of Science, Mechanical Engineering

Graduated Cum Laude with Engineering Honors, GPA: 3.65

Awards: Albert Dorman Future Leader, Discovery Scholar, Global Scholar, NAE Grand Challenges Scholar, Trustee Scholar (full-tuition), U.S. Student Fulbright Finalist

Los Angeles, CA

May 2014

RESEARCH EXPERIENCE

Advanced Manufacturing for Energy

August 2014—Present

Prof. Paul Wright, UC Berkeley—Dept. of Mechanical Engineering

- Developing printed thermoelectric devices and integrating with printed batteries, supercapacitors, and traces into a platform for powering wireless Industrial Internet/IoT applications
- Tailoring bismuth telluride and antimony telluride composite slurries for optimal rheological and functional properties in printed thermoelectric applications
- Streamlining manufacturing and process control of flexible thermoelectric generator devices for high throughput printing methods

USC Smart Grid Research Group

April 2012—May 2014

Prof. Yogesh Simmhan, Marc Frincu, USC—Ming Hsieh Dept. of Electrical Engineering

- Coordinated demand response experiments for 38 buildings on the USC campus as part of the Department of Energy-sponsored Los Angeles Smart Grid Project
- Developed a bottom-up approach to baseline load modeling of commercial buildings for demand response applications, where a building's individual industrial appliance loads—HVAC units, fan coil units, or AHUs—are aggregated to synthesize an overall energy load profile (2014 IEEE SusTech)
- Assisted with the collection and analysis of demand response experimental data in order to optimize building and strategy selections and achieve targeted levels of curtailment

Argonne National Laboratory Research Intern

June 2013—August 2013

Dr. Robert Vilim & Dr. Young Soo Park—Nuclear Engineering Division, Chicago, IL

- Developed simulations of under-sodium viewing techniques for sodium-cooled fast reactor maintenance and inspection applications (2014 ICAPP)
- Designed systems in RoboticsLab robotics simulation development environment and Solidworks, and implemented simulated computer vision capabilities with VC++, OpenCV, and Point Cloud Library
- Interned through U.S. Department of Energy's Summer Undergraduate Laboratory Internship

Solar Energy Conversion Using Novel Hybrid Nanostructures

September 2011—January 2012

Prof. Anupam Madhukar, USC—Dept. of Physics & Astronomy

- Tested and characterized a new, group-developed ligand exchange method on as-grown quantum dots (QDs) using conjugated cation—ligand units (here conjugated Pb—ligand units)
- Synthesized colloidal self-assembling Pb-S QDs and characterized their optical properties with UV-Vis spectroscopy

LEADERSHIP EXPERIENCE

Engineers Without Borders, USC Chapter September 2010—May 2014

Co-Project Manager of Corral de Piedras/Las Vegas, Honduras Project

- Constructed a rainwater catchment system in Honduras as part of the Corral de Piedras project, which provided 300 community members with potable water
- Interfaced with EWB-USA and members of the EWB-USC collegiate chapter to design and implement a sustainable schoolhouse structure project in Las Vegas, Honduras
- Led a six-member team in Honduras for assessment, implementation, and monitoring projects

Viterbi Student Ambassador May 2012—May 2014

Student ambassador for the USC Viterbi School of Engineering

- Communicated research advances, engineering student organization developments, and other content relevant to the Viterbi School of Engineering through Twitter, Wordpress, video, and other multimedia to prospective students
- Performed engineering outreach activities with a team of 28 fellow engineering students to provide prospective students and families with a student's perspective as an engineer at USC

USC Wrigley Institute Alternative Energy January 2012—September 2012

Prof. Alice Parker, USC – Ming Hsieh Dept. of Electrical Engineering

- Initiated and led a student group seeking to design and implement renewable energy solutions for the USC Wrigley Institute on Catalina Island, CA
- Provided the Wrigley Institute with a comprehensive energy solution by surveying the project site, examining current building energy usages, and designing a solar energy system
- Modeled a solar energy system on Google SketchUp

ENTREPRENEURSHIP

Spark Clean Energy 2015-2016 Fellow August 2015—Present

Berkeley Fellow responsible for enhancing local energy entrepreneurship efforts through a MOOC and Department of Energy regional cleantech business plan competition

Symbio Robotics May 2014—January 2015

SkyDeck | Berkeley Accelerator member and Founder.org portfolio company building next generation robotics systems and software for industrial manufacturing

- Co-Founded and was VP of Business Development (ceased involvement to pursue graduate degree)
- Performed market research, developed business plans and pitches, and worked on distributed control framework for robotic systems in industrial manufacturing applications

PUBLICATIONS

(2015) Young S. Park, Xiaorui Zhao, Pawel Dworzanski, Zachary T. Gima, Richard B. Vilim. "Interactive Simulation and Visualization of In-Reactor and Under-Sodium Viewing Operations," Nuclear Technology, Volume 191, Number 3, Pages 223-233, September 2015

(2014) Marc Frincu, Zachary T. Gima. "A Bottom-up Approach to Sustained Curtailment and Comfort for Controlled Demand Response," IEEE Conference on Technologies for Sustainability, 2014

SKILLS & INTERESTS

Computational/Software: Arduino, C++, Certified Solidworks Associate (CSWA), FEA, LabVIEW, MATLAB/Simulink, OpenCV, optimization methods, Point Cloud Library, Python, SolidEdge

Interests: Computer vision, energy access issues, energy systems modeling, Hawaiian barbeque, hip-hop/R&B, IDM, international development, piano, pour over coffee, rugby, short stories, The Wire