

Guillermo Garcia

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Education	UNIVERSITY OF CALIFORNIA-BERKELEY Doctor of Philosophy in Mechanical Engineering	Berkeley, CA Candidate
	UNIVERSITY OF CALIFORNIA-BERKELEY Management of Technology Certificate-Hass School of Business	Berkeley, CA 2007-2009
	UNIVERSITY OF CALIFORNIA-BERKELEY Master of Science in Mechanical Engineering	Berkeley, CA 2007-2009
	UNIVERSITY OF SOUTHERN CALIFORNIA Bachelor of Science in Mechanical Engineering	Los Angeles, CA 2004-2007
	UNIVERSITY OF TEXAS AT EL PASO Mechanical Engineering Major	El Paso, TX 2003-2004
Experience	DISTRIBUTED UTILITY ASSOCIATES Research Staff (<i>Distributed Utility Integration Test</i>)	San Ramon, CA 2009-2010
	<ul style="list-style-type: none"> Enhanced LabVIEW programming to test photovoltaic grid integration in both single and three phase applications. Tested reliability and safety standards for several single/three phase inverter systems in the market. 	
	INTEL CORPORATION Mechanical Engineering Graduate Intern (<i>Photonics Technology Laboratory</i>)	Santa Clara, CA 2008-2009
	<ul style="list-style-type: none"> Characterized waveguide performance (transmission/coupling loss and temperature/polarization dependence) for a silicon based multimode echelle grating device. Investigated wavelength dependence for three multimode waveguide dimensions (5x2, 5x6, & 5x20 um). Produced LabVIEW programs and designed efficient DIE holder to optimize testing procedure for analyzing echelle grating performance. Developed image processing technique for investigating waveguide transmission loss and wavelength dependence. 	
Teaching	LAWRENCE BERKELEY NATIONAL LABORATORY Mechanical Engineering Intern (<i>Heavy Ion Fusion Energy Program</i>)	Berkeley, CA Summer 2006
	<ul style="list-style-type: none"> Designed target capsule, loading dock, and holding shelf for a diagnostic target chamber in the Neutralized Drift Compression Experiment (NDCX). Created LabVIEW program to monitor and control target movement within diagnostic chamber. 	
	UNIVERSITY OF CALIFORNIA-BERKELEY Head Graduate Student Instructor (<i>Thermodynamics</i>)	Berkeley, CA 2010
<ul style="list-style-type: none"> Organized course logistics which included managing three graduate instructors and developing/maintaining course website. Educated students on the principles of thermodynamics by holding weekly discussion sections that covered practice problems and theoretical material. 		
UNIVERSITY OF CALIFORNIA-BERKELEY Graduate Student Instructor (<i>Energy Conversion Principles</i>)	Berkeley, CA 2009-2010	
<ul style="list-style-type: none"> Articulated energy conversion principles via solar, nuclear, chemical, electric, and combustion to 35 undergraduate students. Mentored students on various Matlab programming schemes used to analyze energy conversion devices. 		
UNIVERSITY OF CALIFORNIA-BERKELEY Graduate Student Instructor (<i>Computer-Aided Mechanical Design</i>)	Berkeley, CA 2009-2010	
<ul style="list-style-type: none"> Communicated various techniques for advanced computer aided design of mechanical objects with complex geometries using SolidWorks. 		

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- Guided students on thermal and stress finite element analysis for various SolidWork mechanical designs via Cosmosworks.

UNIVERSITY OF SOUTHERN CALIFORNIA Los Angeles, CA
Teaching Assistant/Grader (*Mechatronics Laboratory*) 2006 – 2007

- Managed weekly labs based on mechanical, optical, and electrical subject matter by presenting initial instruction and guiding students through trouble shooting suggestions.
- Tutored various students in technical writing and effective lab techniques for productive results.

Research

LAWRENCE BERKLEEY NATIONAL LABORATORY / UC-BERKELEY Berkeley, CA
Inorganic Nanostructure Graduate Researcher (*Electrochromic window films*) 2010-Present

- Characterized electronic and ionic transport for Indium-Tin-Oxide nanocomposite films.

UNIVERSITY OF SOUTHERN CALIFORNIA Los Angeles, CA
Combustion Laboratory Research Assistant (*Nanocatalyst-based Photovoltaics*) 2006-2007

- Enhanced the optical absorbance of a nanophase titanium oxide photovoltaic for solar harvesting and hydrogen production by testing several inorganic doping materials.
- Designed cooling system to optimize deposition of titanium nano-particles during flame synthesis.

UNIVERSITY OF SOUTHERN CALIFORNIA Los Angeles, CA
Combustion Laboratory Research Assistant (*Frontal Polymerization*) 2005-2006

- Located limits to successful propagation for frontal polymerization by conducting lab-based experiments that measure and map buoyancy effects during propagation.
- Improved imaging process used to detect mechanisms of extinction and instability by developing appropriate set up for laser-induced fluorescent imaging.

Publications

- **Conference Paper:** Tolmachoff, Erik D., Guillermo Garcia, et. al., "Flame Synthesis of Nano-Phase TiO₂ Crystalline Films." Joins State Section of the 5th Combustion Institute Meeting, 25-28 March 2007, U of California San Diego.
- **Published Abstract:** Garcia, Guillermo. "Enhancing the Target Chamber for the Second Phase of the NDCX." Journal for Undergraduate Research, Department of Energy, Vol. 6, 2006.

Skills

Language: Bilingual – English and Spanish

Programs: Pro/E, SolidWorks, Solid Edge, AutoCAD, LabVIEW, Matlab, MathCAD, ImageJ, SPIP
Image, Excel, Power Point, MultiSim

Awards/

Achievements

Alfred P. Sloan Ph.D Fellowship	2009-2010
Alfred L. Brosio Fellowship	2007-2008
USC Viterbi School of Engineering Transfer Student of the Year	2006-2007
USC Merit Research Scholarship	2004-2007
Boeing Scholarship	2005-2007
University of Texas in El Paso Presidential Excellence Scholarship	2003-2004
John Daniel DECA Marketing Foundation Scholarship	2002-2003
Dean's List (UTEP and USC)	2003-2007

Activities

Tau Beta Pi	2006 - Present
Society of Hispanic Professional Engineers	2004 - Present
American Society of Mechanical Engineers	2003 - Present
Pi Tau Sigma (<i>President</i>)	2006 -2007
Viterbi Student Ambassador	2006 -2007
Center for Engineering Diversity	2005 -2007
Joint Education Program	2005 -2006
USC Engineering Rome Overseas Program	Summer 2005