

# RYAN JOSEPH ANDRADE

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## OBJECTIVE

*To apply my skills in Mechanical and Mechatronic Design to innovate novel solutions in renewable energy, consumer electronics, and high technology.*

## EDUCATION

**Masters of Science, Mechanical Engineering**, Stanford University, Expected June 2011, 3.93/4.00 GPA.  
**Certificate in Product Creation and Innovative Manufacturing**, Stanford PRN, Expected June 2011.  
**Bachelors of Science, Mechanical Engineering**, University of California, Davis, June 2009, 3.98/4.00 GPA,  
*Graduated Top of UC Davis College of Engineering.*

## TECHNICAL SKILLS

- **Mechanical Design, CAD/CAM, & FEA:** Solidworks, AutoCAD, Pro-Engineer, Inventor, ANSYS.
- **Software Design & Programming:** C, C++, MATLAB, Assembly Language, focus on embedded systems.
- **Automation and Process Control:** Industrial PLCs (AutomationDirect Direct Logic 205), PID control.
- **Hands-On Mechanical and Electrical:** Mill, Lathe, Laser Cutter, Power Tools, High-Voltage, High-Pressure.
- **Mechatronics:** Microchip PIC, Freescale HC12, Atmel AVR, PCB Design (Altium Designer, Cadsoft Eagle).

## PROFESSIONAL EXPERIENCE

***Smart Product Design/Mechatronics (ME 218) Teaching Assistant (September 2010 - Present)***  
**Stanford University, Stanford, California – Private Educational Institution**

- Responsible for co-managing the Stanford Smart Product Design Laboratory and assisting in teaching the design and implementation of Smart Products, Mechatronics, Automation, Robotics, and Mechanical Design.

***Powertrain Manufacturing Engineering Intern (June 2010 – September 2010)***

**Tesla Motors, Inc., Palo Alto, California – High-Performance Electric Vehicle Manufacturer**

- Lead several projects to retrofit existing battery pack manufacturing equipment for enhanced operator efficiency and safety. Liaised with vendors and designed mechanical parts and assemblies with Solidworks.
- Managed commissioning, installation, and validation of two new manufacturing processes: Motor Rotor Part Washing and Motor Rotor Induction Brazing. Coordinated seismic bracing, electrical certification, training, etc.
- Executed variety of critical hands-on tasks in the relocation of Tesla's powertrain manufacturing lines and creation of Powertrain Manufacturing Engineering Development Area and Tesla Machine Shop.

***Senior Process Engineering Intern (June 2008 – September 2008, June 2009 – September 2009)***

**BioFuelBox Corporation, San Jose, California – Startup Biodiesel-from-Waste Producer**

- Performed plant mass and energy balance of production-scale biodiesel facility, proposed implementation of nitrogen generator to save \$0.10 per gallon in operating costs of producing ASTM-grade B100 biodiesel fuel.
- Developed and installed PID high pressure control system for pilot-scale plant leveraging industrial PLC.
- Evaluated Sonolator technology as potential pre-processing solution for conversion. Recommendation to avoid purchase based on hands-on research translated to direct cost savings of ~\$90,000 in capital expenses.

***Mechanical Engineering Intern (June 2007 – September 2007)***

**Sandia National Laboratories, Livermore, California – United States Government Research Lab**

- Supported research and development of prototype hydrogen storage system utilize complex metal hydrides.
- Performed quality assurance hydrogen absorption and desorption tests for hazardous sample material.
- Designed layout of thermal management system using Solidworks, physically assembled in lab.

***Mechanical Integration Specialist (August 2006 – June 2007)***

**UC Davis Hybrid Electric Vehicle (HEV) Center, Davis, California – Plug-In Hybrid Research Group**

- Designed, fabricated, and mechanically integrated drive inverter for secondary electric powertrain on prototype Plug-In Hybrid Electric Vehicle (PHEV) for national *Challenge X* student design competition.
- Performed variety of basic integration tasks, including wiring, soldering, welding, fabricating parts, etc.

## AWARDS, ACHIEVEMENTS, AND MEMBERSHIPS

- UC Davis College of Engineering Medal 2009
- Stanford University Product Realization Network
- UC Davis ASME Student Chapter, President 2009
- San Benito High School Class of 2005 Valedictorian
- Certified Engineer-in-Training, Passed FE Exam
- Tau Beta Pi, California Lambda Chapter

# References for Ryan Andrade

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## **Jason Mendez**

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## **David Gall**

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Formerly Senior Process Engineer, BioFuelBox Corp.  
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## **Ed Carryer, Ph.D.**

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## **Donald Margolis, Ph.D.**

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**For More Information and Examples of Past Work, Visit Personal Website: [www.stanford.edu/~rjandrad](http://www.stanford.edu/~rjandrad)**