David P. Larson

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Education

University of California, San Diego — in progress
Ph.D., Mechanical Engineering
Advisor: Carlos F.M. Coimbra

University of California, San Diego — 2014
M.S., Mechanical Engineering

University of California, Merced — 2012
B.S., Mechanical Engineering

Research Experience

University of California, San Diego, with Carlos F.M. Coimbra — 2012–present
Forecasting power output of solar power plants.

University of California, Berkeley, with Robert Dudley — Summer 2011
Visiting UC LEADS Scholar, Cal NERDS Program
Evaluated the effects of turbulence on hummingbird flight dynamics.

University of California, Merced, with Carlos F.M. Coimbra — Summer 2010
UC LEADS Scholar
Assisted in the development of an experiment for studying insect flight aeroelastics.

Journal Publications

D.P. Larson, L. Nonnenmacher and C.F.M. Coimbra (2016). **Day-ahead forecasting of solar power output from photovoltaic plants in the American Southwest**, Renewable Energy (91), pp. 11–20.

Teaching Experience

ENG 1: Orientation to Engineering I, Teaching Assistant — Fall 2013, 2014, 2015
University of California, San Diego
Lectured on academic planning, time management, and study habits.

ENG 2: Orientation to Engineering II, Teaching Assistant — Winter 2014, 2015, 2016
University of California, San Diego
Lectured on career planning, business etiquette, résumé development, and presentation skills.

ENG 3: Orientation to Engineering III, Teaching Assistant — Spring 2014, 2015
University of California, San Diego
Lectured on project management, engineering as a profession, and ethics.
Developed interactive design activities.

Student Mentorship

Undergraduate Research, University of California, San Diego

Jeremy Orosco	2012–2014
Alex Corliss	2012–2013
Marina Fernandez	2012–2014
Jocelyn Lu	2013–2014

Jessica Mart 2014–2015
Renn Darawali 2014–2015
Lorenzo Page 2013–present
Ciara Dooley 2013
Stuart Sapia 2015–present

Senior Environmental Design Project Spring 2014
University of California, San Diego
Project title: "Self-Powered Weather Station for Environmental Research"
Project members: Atalie Dajani, Kingston Hon, Leighann Huang, Jocelyn Lu

Visiting Undergraduates, University of California, San Diego
Khari Rockward (Moorehouse College) Summer 2012, 2013
Jonathan Perez (Harvey Mudd) Summer 2014
Mark Lozano (Pomona College) Summer 2015

High School Students, University of California, San Diego
Leah Harvey, Madeline Song, Miya Coimbra, Varkey Alumootil Summer 2015

Outreach and Community Service

Center for Energy Research: Outreach Council, Volunteer 2014–present
University of California, San Diego
Presented solar energy demonstrations at events in the San Diego area.

SWEET Workshop Series, IDEA Student Center 2015–present
University of California, San Diego
Co-developed a set of technical workshops for undergraduate engineers.
Taught workshops on Python, Matlab, Solidworks, numerical methods, time-series analysis and image processing.

Professional Activities

Paper Reviewing
Solar Energy, Renewable Energy, AMS Journal of Applied Meteorology and Climatology

Awards

1st Place: People's Choice, Innovate to Grow Competition Spring 2012
University of California, Merced
Project title: "Microturbine for UC Merced Irrigation Canals"
Team members: David Larson, Daniel Leong, Samuel Isaiah, Steven Fleming

Distributed Power Generation Project 2011
Project title: Solar Powered Cargo Ship
Sponsors: ESW, SunEdison/MEMC, Autodesk
Award amount: $8150

Honorable Mention, CITRIS Big Idea Competition Spring 2010
Project title: "Distributed Computing for Open Access Solar Forecasting"
Team members: Ricardo Marquez, David Larson, Hugo Pedro
Award amount: $1000

Affiliations

ASME, Student Member 2009–present

Technical Skills

Data Science: machine learning, numerical optimization, data visualization, statistical data analysis, image processing, time-series analysis

Software: Python (NumPy, SciPy, Pandas, scikit-learn, iPython), MATLAB, Mathematica, C, Go, Julia, SQL, shell scripting, Git, Microsoft Office, LaTeX, Pro/ENGINEER, Solidworks

Hardware: Arduino, Beaglebone, Raspberry Pi, XBee, analog and digital sensors, I^2C, SPI, UART, machining (mill, lathe, CNC)

Platforms: Mac OS X, Linux, Windows