Grant Vousden-Dishington

NSF Graduate Research Fellow at UC San Diego

GrantRVD+linkedin@gmail.com

Summary

My academic research is focused on methods to design and improve brain-computer interface (BCI) and neuroregenerative technologies. To this end, I've studied computer science, electrical engineering, materials science, and neuroscience. I also participate in educational endeavors, including outreach for local schools and teaching my own sections whenever possible. Outside of my graduate studies, I am also exploring ways to improve the accessibility, affordability, and understanding of hearing aid technology.

Honors and Awards

Graduate Research Fellowship

National Science Foundation

2011

Annual fellowship offered by the NSF to graduate students, providing full funding for up to 3 years and additional opportunities.

Education

University of California, San Diego

Doctor of Philosophy (Ph.D.), 2011 - 2016

Activities and Societies: Jacobs Undergraduate Mentorship Program, Neuroscience Outreach Program, Academic Connections at UCSD

University of California, Irvine

Bachelor of Science (B.S.), Computer Science, Philosophy, and General Engineering, 2006 - 2011

Activities and Societies: UTeach, UC Leadership Excellence through Advanced Degrees (LEADS) Program, Donald Bren School of Information and Computer Science Honors Program, Center for the Neurobiology of Learning and Memory (CNLM) Outreach Program

Carmel High School

2002 - 2006

Activities and Societies: Mock Trial Team, AP Calculus BC, AP Chemistry, AP Economics, AP English Language, AP English Literature, AP U.S. History

Experience

Graduate Student Researcher at UC San Diego

March 2012 - Present (3 years 6 months)

Automation of in-vitro neural image processing and analysis of spine location, spine density, and synaptic locations using ImageJ. Advisor: Shelley Halpain.

NSF Graduate Research Fellow at UC San Diego
September 2011 - Present (4 years)

The College Classroom (TCC) Participant at UC San Diego
January 2013 - March 2013 (3 months)

The College Classroom is a seminar-style course which, following the mission and goals of the Center for the Integration of Research, Teaching and Learning (CIRTL) Network, prepares graduate students and post-docs at the CIRTL Practitioner level for a positive teaching experience as a future faculty member by developing their expertise in evidence-based teaching practices that support student learning. see www.cirtl.net/Practitioner

Teaching Assistant (ECE 15) at UC San Diego
July 2012 - December 2012 (6 months)

Engineering Computation, a freshmen level course for electrical engineering students that introduces C programming.

Rotation Student at UC San Diego
September 2011 - December 2011 (4 months)

Studied Granger causality of EEG signals from the motor cortex with respect to motor output in Parkinsonian patient data sets. Advisors: Gert Cauwenberghs and Howard Poizner.

Undergraduate Researcher at UC Irvine
June 2009 - August 2011 (2 years 3 months)

Studied the NeuroEvolution of Augmenting Topologies (NEAT) algorithm and cerebellar learning to improve learning in neural network simulations and autonomous robotic platforms. Advisor: Jeffrey L. Krichmar.

Computer Lab Assistant at UC Irvine
September 2008 - June 2011 (2 years 10 months)

Student Instructor at UC Irvine
2009 - 2011 (2 years)

Designed and lead a seminar titled "Mind/Man/Machine" every Spring for three years, introducing students to issues in the philosophy and ethics of artificial intelligence and related research, emphasizing student lead discussion and interaction. Faculty Advisor: Eric Mjolsness.

Visiting UC LEADS Researcher at UC Merced
June 2010 - September 2010 (4 months)

Studied robotic balance and video acquisition in the ROBOTIS BIOLOID Platform. Advisor: Stefano Carpin.

Skills & Expertise

Cell Culture

Computational Neuroscience
Artificial Neural Networks
Programming
Matlab
Fluorescence Microscopy
Neurophysiology
Digital Image Processing
ANSI C
Java
Python
Bioengineering
Bioelectronics
Electronics
Digital Circuit Design
Biomaterials
Biocompatibility
Decellularization
Teaching
Student Outreach
Higher Education Research
University Teaching
Neuroscience
Image Processing
Computer Science

Volunteer Experience

Volunteer at Neuroscience Outreach Program

September 2011 - Present (4 years)

A program organized by the graduate students of the Neurosciences doctoral program at UCSD that arranges presentations at local schools and events, with the goal of educating participants of all ages about neuroscience and inspiring students to pursue careers in neuroscience.

Volunteer at UCSD @ Bell Middle School

September 2011 - Present (4 years)

A student run outreach and mentorship program run by UCSD students to help 6th-8th grade students at Alexander Graham Bell Middle School, a local campus composed mostly of minority and underprivileged students.

Volunteer at ISEE Education

September 2011 - June 2012 (10 months)

A weekly, after-school outreach program at Linda Vistal Elementary School run by UCSD students to increase math proficiency and interest in fourth grade pupils.

Projects

An Artificial Intelligence Approach for Tetris

March 2009 to June 2009

Members:Grant Vousden-Dishington, Charles "Chuck" Edwall, Leo Wu

Our self-selected class project was to create an AI capable of playing the classic game, Tetris. We built our program on top of code provided for a game design class at Stanford University. Our algorithm considered all possible moves given the current and next pieces in a Breadth First Search pattern. Each possible move was evaluated as a score calculated from a weighted linear combination of arbitrary properties. These weights were optimized with a genetic algorithm over thousands of simulations.

Courses

Doctor of Philosophy (Ph.D.)

University of California, San Diego

Tissue Engineering	BENG 277
Principles of Nanoscience and Nanotechnology	ECE 212AN
Biophysics for Engineers	ECE 280
Biophotonics	BENG 247A
Digital Image Processing	ECE 253
VLSI Digital Systems	ECE 260A
Molecular Neurobiology	NEU 200A
Systems Neuroscience	NEU 200B
Cognitive Neuroscience	NEU 200C
Bioelectronics	BENG 247B
Biophysics Technique Lab	BGGN 266
Nanoscale VLSI	ECE 235
Analytical Methods in Computational Neuroscience	NEU 282
Statistical Methods and Experimentation	NEU 225
Biophysics of Neurons	PHYS 278
Mammalian Neuroanatomy	NEU 257
Neurodynamics	BENG 260

Languages

Japanese (Limited working proficiency)

Test Scores

GRE General Test (Math)

October 2010 Score:790

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Contact Grant on LinkedIn