Daniel A. **Hagen**

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OBJECTIVE

Seeking a position where I can integrate my fundamental understanding of dynamical systems, computer simulations, and control theory with the development of robotic systems, prosthetics, and orthotics.

EDUCATION

University of Southern California, Viterbi School of Engineering *Los Angeles, CA*
Doctor of Philosophy in Biomedical Engineering *May 2016 - Exp. December 2020*
- GPA: 3.97 • Recipient of the Provost Fellowship

University of Southern California, Viterbi School of Engineering *Los Angeles, CA*
Master of Science in Biomedical Engineering *January 2015 - May 2016*
- GPA: 3.95

University of Arizona *Tucson, AZ*
Bachelor of Science in Mathematics *August 2006 - May 2010*
- GPA: 3.60 • Minors: Chemistry, Biochemistry

SKILLS

- Python
- MATLAB & Simulink
- Adobe Illustrator
- Microsoft Office (Excel, Word, PowerPoint)
- LaTeX
- Computational Analysis of Dynamical Systems
- Linear/Nonlinear Control Theory

EXPERIENCE

University of Southern California, Department of Biomedical Engineering *Los Angeles, CA*
Teaching Assistant - BME 620L: Applied Electrophysiology *August 2018 - PRESENT*
- Coordinate laboratory experiments designed to utilize concepts from biophysics to record physiological electrical phenomena and to stimulate electrically-excitable tissue
- Utilize *Great Lakes NeuroTechnologies* BioRadios and BioCapture software to record electromyography, electroencephalography, and electrocardiography
- Lead weekly group discussions with 15 students to encourage student proficiency in course concepts and lab techniques while focusing on relevant engineering principles

University of Southern California, Division of Biokinesiology and Physical Therapy *Los Angeles, CA*
Graduate Research Assistant *January 2016 - PRESENT*
- Examine and quantify the effects of physical and physiological constraints on the neural control of movement from a mathematical perspective
- Incorporate physiologically-reasonable neurological and mechanical parameters to construct complex models of limb movement
- Create Python and MATLAB scripts to either analyze or control complex, redundant, dynamical systems
- Design kinematic and kinetic movement algorithms to investigate how variability influences neural constraints

Hayutin & Associates *Los Angeles, CA*
Personal Tutor *January 2015 - June 2018*
- Educated high school students in the Greater Los Angeles area in Mathematics and Science
- Gained experience working as a freelance tutor with multiple families for extended durations
- Analyzed each student's progress to adjust material presentation as to appeal to various student learning styles
- Obtained invaluable information about communication with respect to learning

University of Southern California, Department of Aerospace and Mechanical Engineering *Los Angeles, CA*
Graduate Research Assistant *January 2017 - June 2017*
- Applied differential geometry and group theory principles to the control of a physical limb system under holonomic and nonholonomic constraints
- Characterized the configuration space of tendon-driven mobile articulated systems to better understand constrained movement across the manifold
- Gathered fundamental information regarding the applications and limitations of nonlinear, time-varying analysis and differential topology