

# KATHERINE ELLIS

<http://ieng9.ucsd.edu/~kellis/>

kellis@ucsd.edu

360-608-4265

## Education

Ph.D. Candidate in Electrical and Computer Engineering, University of California, San Diego, San Diego, CA  
September 2010 - present

M.S. Electrical and Computer Engineering, University of California, San Diego, San Diego, CA  
December 2012 (GPA: 3.84)

Concentration in Intelligent Systems, Robotics and Control

Relevant Courses: Random Processes, Statistical Learning Theory, Artificial Intelligence: Learning, Digital Signal Processing, Convex Optimization, Unsupervised Learning, Computer Vision, Parameter Estimation, Bayesian Methods

B.S. Electrical Engineering, University of Southern California, Los Angeles, CA

May 2010 (Summa Cum Laude, GPA: 3.92)

Concentration in Controls and Robotics

Relevant Courses: Introduction to Artificial Intelligence, Introduction to Linear Systems, Linear Control Systems, Probability Theory for Engineers, Applied Linear Algebra for Engineering

## Honors

TREC (Transdisciplinary Research in Energetics and Cancer) Scholar ('12)

UCSD ECE Departmental Fellowship ('10-'11)

USC Trustee Scholar (Full Tuition) ('06-'10)

USC Engineering Honors Program ('06-'10)

National Merit Scholar ('06)

## Publications

K. Ellis, E. Coviello, & G. Lanckriet. "A Bag of Systems Representation for Music Auto-tagging." *To appear in IEEE Transactions on Audio Speech and Language Processing.*

K. Ellis, E. Coviello, and G. Lanckriet. "Semantic Annotation and Retrieval of Music Using a Bag of Systems Representation." ISMIR 2011. Miami, FL. October 24 - 28, 2011.

## Research Experience

Transdisciplinary Research in Energetics and Cancer (Jul '11 – present)

PI: Jacqueline Kerr, Assistant Professor, Family & Preventive Medicine

*Developed machine learning methods to predict physical activity type and intensity from sensor data*

Workshop Organizer: NIPS 2012 Workshop on Machine Learning Approaches to Mobile Context Awareness

UCSD Computer Audition Lab (Sep '10 – present)

PI: Gert Lanckriet, UCSD Electrical and Computer Engineering

*Machine Learning applied to automatic music tagging systems*

Applications of Radar in Human Gait Analysis ('08 – '09)

PI: Hossein Hashemi, USC Electrical Engineering

*Performed experiments on detecting human movement and biometrics with Ultra-wideband radar*

## Work Experience

Microsoft Research Silicon Valley: Research Intern (Summer '13)

Northrop Grumman Aerospace Systems: Communication Systems Engineering Student Intern (Summer '10)

*Systems engineering on payload of Advanced EHF Military communications satellite*

Peer Tutor, USC Viterbi School of Engineering Academic Resource Center (Jan '10 – May '10)

*Tutored student in Electrical Engineering, Mathematics, Physics, and Computer Science*

Bonneville Power Administration, U.S. Dept. of Energy: Engineering Intern (Summer '07, '08, '09)

## Activities

Vice President, UCSD Triathlon Team (member '10 – present, VP '13-'14)

Botball Club, UCSD ('10) – High School Robotics Club Tutor

Eta Kappa Nu: Electrical and Computer Engineering Honor Society, Recording Secretary ('09, '10)

Four Year Varsity Athlete, USC Cross-Country & Track ('06-'10)

Willis O' Hunter Award—Graduating Senior Athlete with highest GPA ('10)

Dr. James E. Slosson Academic Excellence Award ('09)

PAC-10 All-Academic Team (Cross-Country and Track, '07, '08, '09)

Walk-On Athlete of the Year Award ('08)