

Program in Applications of Computing
2016 Senior Theses / Independent Work

Name	Major	Thesis
Yonatan Benyamini	ORF	Halo Mass and Assembly History Exposed in the Faint Outskirts of Galaxies
Meredith Bertasi	ORF	A Good-Turing Approach to Estimating the Probability of Extraterrestrial Life
Suraj Bhat	ORF	Quantifying the Potential for Dynamic Ride-Sharing of New York City's Taxicabs
Brian Chen	ELE	An Origami Paper Creasing Device
Carolyn Chen	ELE	A Minimalistic Approach to Tactile Sensing - Object Classification Using Vibration Signals
Rosa Ciummo	MAE	Getting into the Swing of Things: Building a Humanoid Robot to Explore Different Swinging Algorithms and Configurations
Erik Davis	ORF	Clustering and Outlier Detection: Methods and Applications in Smart Home Networks
Chuck Dibilio	ECO	Investor Attention in Financial Markets: Do Increases in Google Search Volume Create Abnormal Returns
Anqi Dong	ELE	Improvements to the Prediction Accuracy of a Noninvasive Mid-Infrared Glucose Sensor
Rory Fitzpatrick	PHY	Toward an Energy Model for Electronic Recoils in DarkSide-50
Chandler Gay	ORF	Simulated Solar Variability Effects Under High Penetration Renewable Energy Deployment
Anastasia Georgiou	CBE	Walking on Clouds: An Exploration Algorithm for Molecular Dynamic Simulators
Kristin Goehl	ORF	A Queue-Based Monte Carlo Analysis of the Efficacy of Emergency Department Fast Tracks
XuLing Hu	ELE	Prototyping and Evaluating the TrustGuard Architecture

Peter Johnson	PSY	A Shared Space in Thought: Similarity Approaches to Analyzing fMRI Data
Jamal Johnson	POL	Gentrification and the Subprime Mortgage Crisis
Frederic Koehler	MAT	Theory of Topic Inference: An Exposition
Chia-Lo Lee	ELE	Badminton Shuttlecock Tracking and 3D Trajectory Estimation from Video
Woo Jung Lee	ORF	Stock Price Movement Prediction Using StockTwits and Topic-Sentiment Neural Network
Michael Lee	MAE	Modeling Uncertainty in Stereo Vision for Precise and Robust State Estimation
Shuyang Li	ORF	Exploring Rich Features for Sentiment Analysis with Various Machine Learning Models
Anthony Markowitz	MAE	Flying with Five: Design of a Motor Failure-Tolerant Control System for Hexacopters
Eve Matthaey	AST	Higher Order Current Deposition Schemes
Henry Meng	MAT	Sums of Directed Cycles and Directed Paths
Eric Principato	MAE	Closing the Spatio-temporal Gap in Ecological Observation with UAVs
Allen Qin	MAE	Design of a Folding-Wing Submersible Aircraft
Roberta Raileanu	AST	Superbubbles driven by Multiple Supernovae in the Two-Phase Interstellar Medium
Neil Rangwani	ORF	Fear Futures: Pricing Models and Trading Strategies for VIX Futures
Sarah Sacco	CBE	The Role of Two-Component Systems in the Nitric Oxide of Escherichia Coli
Zachary Schiffer	CBE	Piezoelectrochemical Energy Harvesting from the Coupling of Mechanics and Electrochemistry in Lithium Ion Batteries
Zachary Shaw	PHI	Who are you? The Effects of Social Network Sites on the Construct of Personal Identity: The Meta-Patterns View
Fangying Shi	ORF	Electricity Spot Prices: A Stochastic Model Applied on PJM Prices in the 21st Century

Matthew Silver	ORF	Using Dirichlet Processes to Identify Unique Artists and Songs in Electronic Dance Music
Ryan Slattery	ORF	A Statistical Analysis of Delinquency and Prepayment Risk in Subprime Mortgage-Backed Securities
Evan Sparano	CBE	A Computational Investigation of the Origin of Hysteresis in Water Sorption Isotherms of Proteins
Joshua Stadlan	MAE	Picking Up Speed: Laser-Based Velocimetry for Wings and Wind Tunnels
Ana-Andreea Stoica	MAT	Community detection in the stochastic block model - hypergraphs and beyond
Raina Sun	ORF	Gone With the Wind: A Stochastic Model of Wind Energy Crossing Time and Error Distributions
Schrasing Tong	ELE	A Crowdsourced Privacy Preserving Social Platform Driven by Users' Consensus
Michelle Tracy	WWS	Russia in the Middle East: Implications for US Foreign Policy
Aditya Trivedi	PHY	Valley Splitting in Si/SiGe Quantum Dots
Campbell Weaver	ELE	Large Area Electronic Strain Sensing System For the Monitoring of Urban Structures
Fiona West	GEO	The herbivory cost of N ₂ fixation and its effect on the abundance of nitrogen-fixing trees in a tropical forest.
Jeremy Whitton	PHY	Non-Additive Casimir Interactions in Equilibrium Fluid Interfaces
Elizabeth Yang	MAT	Some Problems in List Coloring
Alexander Yu	MAT	List 3-coloring P ₆ -free graphs
Christopher Yuk	ORF	A Regime Analysis of Hedge Fund Index Returns and Factor Loadings
Sean Yun	ORF	Numerical Methods for the McKean-Vlasov Process
Charles Zhou	ECO	The Reliability of Chinese GDP: Measuring Underlying Business Activity with Static Factor Models
Shirley Zhu	ORF	Autonomous Taxi Fleet Management Strategies