

Keyser Project Prize

Established by Graham and Margaret Keyser and awarded annually to the best two or more final group presentations of MTHE 493 – Engineering Mathematics Project. The Prize will be awarded on the merits of the final presentation, as well as on the quality of the work done on the project. The Prize includes a Certificate and a Premium of \$1000 (per group).

Past Winners and Projects

2023

Spencer Hill, Wyllie Schenkman, Jordan Curnew, Mark Benhamu

Data Compression via Nonlinear Transform Coding using Artificial Neural Networks
(Supervisor: T. Linder)

Ariana Bakhtyari, Michael Barrack, Jonah Beber, Brock MacDonald

Data Compression via Nonlinear Transforms using Artificial Neural Networks
(Supervisor: T. Linder)

Benjamin Armstrong, Daniel Martin, Ryan Simpson, Emma Stickley

Optimizing Insulin Treatment for Type I Diabetics: A Reinforcement Learning Approach
(Supervisor: S. Yüksel)

Michael Geale, Gabrielle Janfield, Alessia Panzica, Jenna Whitehead

Optimal Design of a Vibration Energy Harvester for Wave Power
(Supervisor: G. Mazzone)

Willow Cherny-Bayer, Nicholas Eto, Jordan Hayes, Chris Metzler

Structure of Mobile Aquaculture Cages
(Supervisor: M. Mohebbi)

2019

Chris Caromicoli, Lachlan Devir, Andrew Downie, Alex Taylor

Motion Planning in Stochastic Environments
(Supervisor: B. Gharesifard)

Alexander Amos, Etienne Berube, Daniel Krsikapa, Hisham Mansour

A Simple Robot That Hops and Flips
(Supervisor: A. Lewis)

Erin Battle, Jonah Eisen, Caelum Kamps, Jessica Kelly

Underwater Demining Operations Optimization and Design of Networked Control Systems
(Supervisor: S. Yüksel)

Joey Blumenstein, Thomas Morrish, Benjamin Simons

Initial Condition Optimization for the Network Polya Contagion Model with an Application to Protect Against Weaponized Smallpox

(Supervisor: F. Alajaji)

2018

David Beallor, Himesh Bhatia, Adam Eisen, Connor McMillan, Daniel Tamming

Image Restoration Algorithms for Musical Style Transfer

(Supervisor: A. Mansouri)

Griffin Baillie, Louis Burelle, Graeme Garner, Stephen MacKenzie

Optimizing Electric Grid Demand Management with Decentralized Learning

(Supervisor: S. Yüksel)

2017

Joshua DiRocco, Mareena MacPherson, Cleo Savides

Underwater Source Seeking Using a Deformable Fish Search and Rescue

(Supervisor: B. Gharesifard)

Matthew Kowal, Gillian Sandison, Len Yabuki-Soh, Raner la Bastide

Region Tracking in an Image Sequence Preventing Driver Inattention

(Supervisor: A. Mansouri)

2016

Julia Fraquelli, Manfred Kao, Palmira Pereira, Siobhan Powell

Modeling Vortex-Induced Vibrations of Cables to Optimize Energy Capture

(Supervisor: A. Lewis)

Matt Boyd, Taylor Reynolds, True Wilson

Extremum Seeking Control Methods for Nonholonomic Source Seeking Vehicles

(Supervisor: B. Gharesifard)

Graeme Baker, Jacqueline Craig, Adam Noble-Marks, James Vuckovic

Audio Denoising Using Stochastic Models

(Supervisor: A. Mansouri)

2015

Leverett Binks-Collier, Garrick Poole, Stephanie Reed

Learning Algorithms in Team and Game Problems

(Supervisor: S. Yüksel)

Jeremy Coulson, Ted Donnelly, Tommy Hall, Drew Steeves

Synchronization of Coupled Oscillators

(Supervisor: B. Gharesifard)

Lucy Santano Carrasco, Kiraseya Preusser

Image Transmission over Optimized Communication Network

(Supervisors: F. Alajaji and T. Linder)

2014

Thomas Hughes, Kevin Gibson, Mitchell Wasson

Automated Face Recognition

(Supervisor: A. Mansouri)

Karin Martin, Marlee Vandewouw

Distributive Algorithms for Deployment of Autonomous Mobile Networks

(Supervisor: B. Gharesifard)

2013

Danny Grenzowski, Josh Levitan, Tristan Milne

Stochastic Image Models, Stochastic Gradient Descent, and Applications to Image Restoration

(Supervisor: A. Mansouri)

Tyson Mitchell, Mikael Schlumpf

Joint Source-Channel Coding for Deep-Space Communications

(Supervisors: F. Alajaji and T. Linder)

2012

Scott Kyle, Stephen Rowlands

Control of An Airfoil in Planar Flow

(Supervisor: A. Lewis)

Patrick Glover, John Treilhard, George Weekes

Restoring MRI Images Using Learned Image Priors

(Supervisor: A. Mansouri)

2011

Alexander Condello and Tyler Longo

Consensus and Agreement
(Supervisor: S. Yüksel)

Matthew Gilbert, Cameron McCormick, Kyle McCormick

Region Tracking Over an Image Sequence
(Supervisor: A. Mansouri)

2010 (tie of 3 groups)

Amy Buitenhuis, Tobias Barton, Ana Douderina

Controlling Water Flow in a Horizontal Channel
(Supervisor: A. Mansouri)

Jeff Heakes, Rob Ballard

Optimized Decoding of Binary Images Over Channels with Memory
(Supervisors: F. Alajaji and G. Takahara)

Ian Scriver, Andrew Brennan

Learning Image Priors Applied To Aesthetics and Art
(Supervisor: A. Mansouri)

2009

Sarah Correll, Colin Sutherland, Emma Willemsma

Computer Vision: Image Tracking
(Supervisor: A. Mansouri)

Melissa Hernandez-Chiang and Margaret LaRocque

Handling Characteristics of Four-Wheel Steering Automobiles
(Supervisors: R. Anderson and T. Linder)

2008

David Burr, Joshua Fletcher, Victoria Wang

The Dubins Car
(Supervisor: A Lewis)

Dana Awamleh, Jeffrey Calder, Allan MacAulay

Region Tracking over an Image Sequence
(Supervisor: A. Mansouri)

2007

Benjamin Turnbull, Adina Bogert-O'Brien

A Project in Robust Control

(Supervisor: A. Lewis)

Dalia El-Shimy, Antonio Sanchez, Eric Simpson

Speech Analysis and Modification

(Supervisor: S. Gazor)

2006

Paul Charbonneau, Thomas Norman, John Turriff

A Comparison of Control Strategies for Nonlinear Systems

(Supervisors: A. Lewis and D. Tyner)

Lindsay Smith

Automation of HAW-1 Ocean Cable Analysis and Study of Sources of Interference

(Supervisors: D. Thomson, L. Lanzerotti, C. MacLennan and W. Burr)

2005 (tie of 3 groups)

Haider Al-Lawati, Ahmed El Assaad, Karim Khairallah

Space-time Block Codes for Multi-Antenna Fading Channels

(Supervisors: F. Alajaji and F. Behnamfar)

Wesley Burr

Application of Statistical Signal Processing to Spatially Separated Climate Data

(Supervisors: D. Thomson and B. Gardiner)

David Campbell, Fok-Jee Leung, Daniel Morgan

Control of a Spherical Pendulum

(Supervisors: R. Hirschorn, D. Tyner and D. Voytsekhovsky)

2004

Matthew Hotrum, Guillermo Medina Llarena, Meghan Young

Constructing and Controlling a Three-Dimensional Overhead Crane

(Supervisor: R. Hirschorn)

Rebeka Matthews

Wind and Wave Modeling on Bridge Structures - A Focus on the Bermuda Causeway

(Supervisor: M. Green)

2003

Yasmin Hashambhoy, Eric Boyd

Swing-up and Sliding Mode Controller for the Double Inverted Pendulum
(Supervisor: R. Hirschorn)

Todd Garrison and Chris Nicola

Multimedia Data Compression over Rayleigh Fading Channels
(Supervisor: F. Alajaji)