

BRENDON COLBERT

CONTACT INFO

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EDUCATION

MAY 2020 Anticipated PhD in MECHANICAL ENGINEERING
Arizona State University, Tempe, Arizona
Dean's Fellowship (2016-2020)
MAY 2016 Bachelors of Science in BIOMEDICAL ENGINEERING and MECHANICAL ENGINEERING
Duke University, Durham, North Carolina
GPA: 3.635

RESEARCH EXPERIENCE

<i>Current</i>	Cybernetic Systems and Controls Laboratory
AUGUST 2016	My research focus in the Cybernetic Systems and Controls Laboratory is on control of nonlinear ordinary differential equations, including "sum-of-squares" programming techniques for polynomial optimization. Additionally we are developing kernel functions for use in machine learning algorithms, and investigating how they can be applied to control systems, particularly with respect to the study of immune system dynamics.
<i>May 2016</i>	Intelligent Motion Laboratory
MAY 2015	Worked on generating a library of optimal motion paths, specifically in regards to wheeled vehicles or robots. Experiments using a motion primitive library and various methods of primitive retrieval and adaptation were studied to determine the fastest and most reliable methods for determining optimal motion paths.
<i>May 2015</i>	Control System's Independent Study
JAN 2015	Helped develop models and code for the Ferrari company. Worked specifically on Neural Network Gearbox Modelling of Ferrari cars in Matlab and Simulink. Designed code to create individualized models of driver behavior that was validated on course data.

TEACHING EXPERIENCE

<i>March 2016</i>	Director of Duke Bioscience and Engineering Camp
AUGUST 2016	In charge of running three, two week, camps for 30-35 Middle School and High School students. This included hiring nine camp counselors from the Undergraduate and Graduate school at Duke University, collaborating with multiple campus organizations to gain access to electron microscopes and set up tours, and creating new curriculum for the camp.
<i>Current</i>	Lead Teacher's Assistant
MAY 2015	Oversaw 36 Teacher's Assistants for the Computational Methods in Engineering course. Additionally I aided in some course development and taught a lecture for the course.

PAPERS

- [1] B. Colbert, M. Hesameddin, and M. Peet. Combining SOS and Moment Relaxations with Branch and Bound to Extract Solutions to Global Polynomial Optimization Problems. *arXiv preprint arXiv:1609.01019v3* (2017).
- [2] B. Colbert, and M. Peet. A Convex Parametrization of a New Class of Universal Kernel Functions for use in Kernel Learning. *arXiv preprint arXiv:1711.05477* (2017).

OTHER EXPERIENCE

Knowledgeable in: Matlab, SolidWorks, PYTHON, L^AT_EX,