Andrew Arkebauer

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EDUCATION

Yale University New Haven, CT
Bachelors of Science in Electrical Engineering – ABET Accredited *Expected May 2017*
Cumulative GPA: 3.69; Major GPA: 3.84
Relevant Coursework: Systems & Control; Digital Signal Processing; Circuits & Systems Design; Mechatronics

Lincoln Southwest High School Lincoln, NE
Cumulative GPA: 4.49 *May 2013*
Awards: National Honor Society, Academic Top Three Percent, AP Scholar with Distinction
Activities: Science Olympiad (President, National Runner-Up), Varsity Cross Country and Track & Field (Captain)

PROFESSIONAL EXPERIENCE

Yale University – Center for Systems Science New Haven, CT
Student Intern *Summer 2016*
- Simulated control mechanisms in networks of unstable dynamical systems which mutually adapt in order to stabilize each other, culminating in a manuscript to be published as a Yale Technical Report
- Developed and implemented an artificial neural network architecture ultimately used in an optical character recognition application capable of identifying handwritten samples
- Modeled and simulated a maritime autopilot system utilizing an adaptive control scheme in variable weather conditions, resulting in a 50 percent decrease in heading error over conventional control methods

NASA Langley Research Center Hampton, VA
Student Intern *Summer 2015*
- Collaborated with a team of interns to analyze data from a human-in-the-loop experiment testing new aircraft cockpit software, resulting in refinements designed to increase performance and pilot satisfaction
- Designed a prototype algorithm to increase the fuel efficiency of experimental cockpit software, concluding with a presentation to research directors demonstrating algorithm performance
- Developed an in-depth knowledge of the functionality of aircraft control systems and procedures through the use of high-fidelity cockpit simulators used in the collection of experimental results

University of Nebraska-Lincoln – Center for Materials and Nanoscience Lincoln, NE
Research Assistant *Summer 2013*
- Researched the motion of colloidal particles in response to low-intensity light exposure, resulting in control over material colors and textures, in order to mimic adaptive camouflage and biological tissue growth
- Co-authored *Color and Texture Morphing with Colloids on Multilayered Surfaces*, published and designated an Editors' Choice by the American Chemical Society

LEADERSHIP & ACTIVITIES

Yale Undergraduate Aerospace Association
Project Leader *September 2013 - Present*
- Managed a team of 13 students with over $4000 in funding, including a NASA Space Grant, for the design and construction of a fixed-wing unmanned aerial vehicle
- Directed introductory electronics and Solidworks workshops to provide students with the skills necessary to contribute to aerospace projects in a high capacity
- Designed a two-stage rocket and data acquisition system to analyze flight performance, showing the advantages of a multistage rocket and areas in which subsystems could be enhanced
- Constructed and launched a rocket and payload designed to experimentally observe the effects of general and special relativity, earning second place in the 2014 Intercollegiate Rocket Engineering Competition

TECHNICAL SKILLS

Software: MATLAB, Simulink, Solidworks, AutoCAD, Inventor, LaTeX, Mathematica, Altera Quartus, Microsoft Office
Languages: Python, MATLAB, C, C++, Racket, VHDL, R
Operating Systems: Proficient in Macintosh, Windows and Linux (Debian)
Additional: Parallel computing via construction of a Beowulf computing cluster; FPGA prototyping through design of a microcontroller; Manufacturing techniques involving 3D printers, laser cutters, and CNC machining

PUBLICATIONS

Chen, Z., Li, S., Arkebauer, A., Gogos, G., Tan, L. (2015) "Color and Texture Morphing with Colloids on Multilayered Surfaces" *ACS Applied Materials & Interfaces* 7(19), 10125-10131. doi:10.1021/am5087215