

Matthew J. Krott

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EDUCATION

The Pennsylvania State University

Ph.D. Candidate in Mechanical Engineering

Aug. 2013-present

Technical Focus: Aerospace Structures, Structural Dynamics, Controls
Cumulative GPA: 4.00/4.00

Bachelor of Science (with Honors) in Mechanical Engineering

Aug. 2009-May 2013

Minors in Engineering Mechanics and Mathematics

Cumulative GPA: 3.99/4.00

EXPERIENCE

Graduate Research Assistant

August 2013-present

Mechatronics Research Lab & Vertical Lift Research Center of Excellence (University Park, PA)

- Developed finite element model of small-scale tailboom and performed experimental modal analysis to calibrate and validate the model.
- Conducted experiments to verify analytical models and demonstrate augmentation of damping in target tailboom modes with fluidic flexible matrix composite (F²MC) vibration treatments.

Aircraft Systems Intern, Engineering Enterprise Support

May 2013-Aug.2013

Boeing Defense, Space & Security (Ridley Park, PA)

- Validated 767-2C tanker wire harness CATIA models according to Boeing electrical standards.
- Created step-by-step instructions for several processes to enhance quality and speed of group's work.

Undergraduate Research Assistant

Vertical Lift Research Center of Excellence (University Park, PA)

May 2012-May 2013

- Designed complete test setup to characterize vibrations in scale model helicopter tailboom.
- Developed ANSYS finite element codes to model bistable chord-morphing rotor blade concept.
- Designed, fabricated, and tested unit cell of bistable elastic arch structure.

Structures/Design Intern, Operational Commercial Engines

May 2011-Aug. 2011

Pratt & Whitney (East Hartford, CT)

- Investigated and identified root cause of binding in low-pressure compressor stator vanes.
- Initiated task force with nine other interns to highlight opportunities for improvement in the engineering intern program and present them to upper management.

SELECTED PUBLICATIONS

1. "Finite Element Modeling of Fluidic Flexible Matrix Composite (F²MC) Treatments for Bending and Torsional Vibration Control." AIAA Scitech 2016, San Diego, CA. (first author)
2. "Experimental Validation of Tailboom Vibration Control Using Fluidic Flexible Matrix Composite Tubes." AHS Forum 71, Virginia Beach, VA. (second author)
3. "Tube Compliance Effects on Fluidic Flexible Matrix Composite Devices for Rotorcraft Vibration Control." AIAA Scitech 2015, Kissimmee, FL. (first author)
4. "Experimental Characterization of a Tailboom with Fluidic Flexible Matrix Composite Tubes." AHS Forum 70, Montreal, QC, Canada. (second author)

LEADERSHIP/ ACTIVITIES

Vice President & Founding Member, Springfield benefiting THON Alumni Interest Group 2016-present

President, Penn State Engineering Ambassadors Alumni Association 2013-2015

University Relations Director, Tau Beta Pi (PA Beta) 2012-2013

Communications Captain, Penn State IFC/Panhellenic Dance Marathon 2012-2013

Student Workshop Coordinator, Engineering Ambassadors National Network 2012

SKILLS

Excellent verbal and written communication skills. Extensive experience programming in MATLAB. Also proficient with NI LabVIEW, ENOVIA, CATIA V5, ANSYS, Abaqus, and Solidworks.

AWARDS/ RECOGNITION

National Science Foundation Graduate Research Fellow 2014-2017

Gabron Graduate Fellowship Spring 2014

Vertical Flight Foundation Scholarship Spring 2014

Penn State Commencement Mechanical Engineering Student Marshal Spring 2013

Thomas Briggs Hunter Memorial Award for Student Leadership Spring 2013

Tau Beta Pi Stabile Scholarship Spring 2012