

# JOHN A. DOUGHERTY

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## EDUCATION

- M.S. in Mechanical Engineering**, Aerospace Concentration EXPECTED MAY 2014
- The George Washington University — Washington, DC Cumulative GPA: 3.95 / 4.00
  - Research topic: Laser-guided autonomous landing of a quadrotor UAV on an inclined surface.
- B.S. in Mechanical Engineering**, Aerospace Concentration MAY 2013
- The George Washington University — Washington, DC Cumulative GPA: 3.99 / 4.00

## EXPERIENCE

**The George Washington University** — Washington, DC

GRADUATE TEACHING ASSISTANT

- MAE 1004 – Engineering Drawing and Computer Graphics JAN. 2014 – PRESENT
- MAE 4182 – Electromechanical Controls AUG. 2013 – DEC. 2013

GRADUATE RESEARCHER

MAY 2013 – PRESENT

*Performing research within the Flight Dynamics and Control Laboratory with specific applications in vision-based estimation and control for UAV's. Independently designed, implemented, and tested both hardware and software for a new low-cost onboard laser-based landing assistance system using a CMOS camera and laser modules. Wrote image processing code in C using OpenCV library.*

UNDERGRADUATE RESEARCH ASSISTANT

JAN. 2013 – MAY 2013

*Assisted graduate student in UAV development in the Flight Dynamics and Control Laboratory with specific involvement in embedded electronics and PCB design. Designed and assembled PCB for quadrotor using Cadsoft EAGLE.*

GRADER

JAN. 2013 – MAY 2013

*Responsible for grading MAE 1004 – Engineering Drawing and Computer Graphics homework. Knowledge of technical drawing required.*

**Naval Research Laboratory** — Washington, DC

MAY 2012 – AUG. 2012

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*Performed research on dynamic foam properties within the Combustion Dynamics section under the supervision of a lab mentor. Planned and executed experiments and processed data using MATLAB and Python. Captured micrometer-scale images using a charge-coupled device camera fitted with an objective lens and analyzed images using ImageJ. Assembled results and presented findings to peers and supervisors. Summarized results in a technical paper.*

**Wyoming Valley Country Club** — Hanover Township, PA

SEPT. 2007 – AUG. 2011

## AWARDS & HONORS

<b>Graduate Research Fellowship</b>	2013 – 2014
<b>The Alfred Martin Freudenthal Prize</b>	MAY 2013
<i>Awarded to the graduating senior in the School of Engineering and Applied Science with the highest grade point average from the previous semester.</i>	
<b>Pi Tau Sigma Honors Mechanical Engineering Society</b>	DEC. 2011
George Washington Phi Gamma Chapter	
PRESIDENT (2012-2013)	
<i>Responsible for organizing events, leading meetings, and attending the National Pi Tau Sigma Convention.</i>	
<b>Tau Beta Pi Honors Engineering Society, DC Gamma Chapter</b>	DEC. 2011
<b>Outstanding Academic Achievement Award</b>	2011, 2012, 2013
<i>Awarded to students in the top 2% of the class by GPA.</i>	
<b>Society of Satellite Professionals International Scholarship</b>	SEPT. 2012

## SKILLS & EXPERTISE

Proficient in MATLAB, Pro/E, Mechanical, AutoCAD, EAGLE PCB, and Microsoft Office. Adaptable to new software. Working knowledge of C and C++. Comfortable in Windows, OS X, and Linux environments. Demonstrated excellence in written and oral communication skills. Experienced in research, design, experimentation, data processing, presentation, and technical writing. Experienced in PCB design and assembly. Some experience machining.

## PUBLICATIONS

- (1) J. Dougherty, D. Lee, and T. Lee, "Laser-based guidance of a quadrotor UAV for precise landing on an inclined surface," in *Proceedings of the American Control Conference*, 2014, submitted.

*References available upon request.*