Andrew Ellenberg
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A. Education

Drexel University, Philadelphia, PA	Mechanical Engineering	B.S.	2013

B. Appointments:

09/2013-present	Research Associate, Dept. of Mech. Eng. & Mech., Drexel University
09/2013 -3/2014	Teaching Assistant, Dept. of Mech. Eng. & Mech., Drexel University

C. Field of Interests

- Unmanned Aerial Vehicles
- Structural Health Monitoring
- Computer Vision Algorithms

D. Professional Experience

Engineered Arresting Systems Corporation, Logan Township, NJ
Research and Development CO-OP
September, 2011 to March, 2012

1. Tested samples of cellular cement and other cellular materials
2. Reported results and updated test scheduling
3. Researched and tested machinery to convert a batch process to a continuous process
4. Tested different types of foaming agents to determine which would be best for different materials
5. Inspected an EMAS bed and analyzed current issues and researched solutions

Checkpoint Systems, Thorofare, NJ
Research and Development Engineering Intern
September 2010 to March 2011

1. Test hard tags and labels for performance on security systems and test for strength
2. Provide feedback on performance and suggest ways to improve
3. Purchase supplies for testing
4. Assist in designing new test equipment
5. Create spreadsheets to make testing more efficient in manufacturing plants

Philadelphia Water Department, Philadelphia, PA
GIS CO-OP
September 2009 to March 2010

1. Edited current maps of Philadelphia water mains
2. Added several thousand water service lines to the current maps of Philadelphia
3. Delivered time sheets and distributed paychecks for the GIS department
4. Drove cars to and from the garage for maintenance and repairs

E. Senior Engineering Design Project

Unmanned Aerial Vehicle for Infrastructure Evaluation

1. Utilize Parrot AR 2.0 drone and X-Box Kinect to prove non-contact measurements of deformation are attainable for infrastructure inspection
2. Generate algorithm for identifying targets and track deformation or movement of targets
3. Validate algorithm with photogrammetry using the TRITOP system
4. Compare results to finite element model and current methods of deformation analysis
5. Research current state of the art telemetry and GPS systems for future drone tracking
6. Prove that in the future with better equipment, UAV's can be used for infrastructure inspection

F. Honors and Awards

1. ANST Fellowship - 2014
2. Carleone Fellowship Award - 2014
3. Dean Scholarship 2008-2013
4. Nomination for the Co-op Award – December 2012
5. Accepted into the Pennoni Honors College September 2010 - Must achieve a cumulative 3.75 GPA
6. Eagle Scout – 2008
7. Boy Scout World Conservation Award
8. People's Choice Award 2007 and 2008 - Chosen by teachers for good character

G. Leadership Eagle Scout Project

1. Planned and carried out painting a bridge by Blackwood Lake and cleaning the area around the lake.
2. Directed over forty volunteer workers with 56 personal hours and 222 volunteer hours.
3. Acquired several hundred dollars' worth of materials donated from local businesses for the project.

H. Presentations

1. Multispectral Aerial Imaging for Infrastructure Evaluation. ASNT Structural Materials Technology for Highways and Bridges Conference 2014. Washington DC
2. Masonry Crack Detection Application of an Unmanned Aerial Vehicle. International Conference on Computing in Civil Engineering 2014. Orlando, Florida
3. Infrastructure Assessment Utilizing an Unmanned Aerial Vehicle. Research Day Drexel University 2014
4. Use of UAV for Quantitative Infrastructure Evaluation. 2nd Annual Keystone AUVSI Symposium on Unmanned Systems and Robotics. Drexel University 2013
5. Unmanned Aerial Vehicle for Infrastructure Evaluation. Research Day Drexel University 2013

I. Publication

1. Use of Unmanned Aerial Vehicle for Quantitative Infrastructure Evaluation. Journal of Infrastructure Systems. Under review.