700 Forbes Ave. Apt. #302
Pittsburgh, PA 15219

BRADY SHEEHAN

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EMPLOYMENT

College Tech Specialist, SCI Clearance **Lockheed Martin** **Summer 2016**

- Developed and/or implemented various image processing algorithms in Python and C++ and contributed to production level code baseline working with Scipy, Numpy, and Matplotlib libraries.
- Modified existing algorithms related to SAR to run on an AWS cluster with PySpark.
- Wrote unit tests for critical image processing algorithms.

College Tech Senior, SCI Clearance **Lockheed Martin** **Summer 2015**

- Prototyped an algorithm for registering complex image data with a focus on correcting geometric distortions from the In-SAR image acquisition process.
- Studied techniques for registering complex multi-modal image data.
- Created program to parse custom file format and to plot data for further analysis.

RA in Image Processing **Duquesne University** **Summer 2014 – Present**

- Analyzed a Gaussian Mixture Model framework for applications to super resolution.
- Analyzed geometric denoising frameworks to determine optimality bounds with respect to PSNR.
- Developed image processing algorithms in MATLAB/C++ for prototyping new ideas related to low-level vision.
- Attended weekly research meetings on various open questions in the field and progress toward answering them.

Resident Advisor **Duquesne University** **Fall 2014 – Spring 2015**

- Mentor to 24 full-time undergraduate students in Towers LLC, helping with personal and career advice.
- Organized events that cultivated a sense of community and team among floor residents.

EDUCATION

Pittsburgh, PA **Duquesne University, Honors College** **Fall 2013 – Spring 2017**

- B.S. Computer Science and Mathematics.
- **Coursework in Computer Science**: Advanced Data Structures; Computer Organization and Assembly Language; Formal Languages and Automata; Operating Systems and Computer Architecture; Software Engineering; Database Management Systems; Computer Security; Web Based Systems; Artificial Intelligence; In-major GPA: 3.93.
- **Coursework in Mathematics:** Calculus I – III; Discrete Mathematics; Differential Equations; Linear Algebra; Numerical Analysis; Probability and Statistics I-II; Abstract Algebra I; Complex Analysis; Real Analysis 1. In-major GPA: 3.71.
- **Extra-curricular Activities**: President of Computer Science Club; Member of Pi Mu Epsilon Math Honor Society; Participant at CMU Hackathon; Participant at ACM ICPC; Member of Knights of Columbus; Member of the MAA.

TECHNICAL EXPERIENCE

Projects **GitHub:** *https://github.com/BradySheehan*

- **Optimality Bounds for Denoising Curvature** (2016). Analyzing the curvature of the level lines of natural images with MMSE in an attempt to find upper and lower bounds for denoising. MATLAB
- **Authorship Verification** (2016). Extracted features from Victorian era texts and used a feed-forward neural network for verifying a work was written by a given author. Python, Matlab
- **Copy-Move Forgery Detection** (2015). Implemented a block matching algorithm for performing copy-move forgery detection. Demonstrated that DCT techniques are not invariant to rotation or scaling. MATLAB
- **Medical Fax Android Application** (2015). Scum master following MVC architecture, implemented speech-to-text feature to allow physicians to quickly dictate patient information into app developed at Duquesne. Java

Talks

- *Optimality Bounds for Recovering Geometric Information in Images,* Youngstown State, PME Meeting (2016).
- *Multiscale Image Analysis and Applications*, Washington and Jefferson College, MAA (2015).

Languages, Technologies, and Skills

- Java; Python; MATLAB; JavaScript; SQL; R; Android; LaTeX; Linux; Git; Agile Methodologies; OOP; Image Processing; SAR.