

# Owen Mayer – Curriculum Vitae

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## Education

- 2017-2019** PhD Electrical Engineering - Drexel University, Philadelphia, PA  
*Candidacy awarded June 2017*
- 2014-2017** MS Electrical Engineering - Drexel University, Philadelphia, PA  
*GPA 3.92*
- 2008-2013** BS Electrical Engineering, Physics Minor - Case Western Reserve University, Cleveland, OH  
*GPA 3.70, graduated cum laude*  
Dean's Honors/High Honors, 8 semesters

## Research and Employment History

- Sep 2014 - Present** - Multimedia and Information Security Lab (MISL) - Drexel University, Philadelphia, PA  
*Postdoctoral Researcher, Graduate Research Assistant*
- Proposed and experimentally validated novel multimedia forensic algorithms and techniques, which has led to seven first-author, peer reviewed publications.
  - Developed state of the art software being used by forensic investigators in the U.S. government.
  - Created interactive demonstrations of my research, which are used to engage people of all skill levels on electrical engineering concepts.
- Jun 2013 - Aug 2014** - Ocean Acoustical Services and Instrumentation Systems (OASIS), Inc., Lexington, MA  
*Staff Scientist*
- Analyzed and documented the performance of experimental sonar systems developed for the U.S. Navy. Presented my findings to teams of engineers and scientists.
  - Developed and implemented a new algorithms to provide real-time acoustic environment feedback. This method was deployed on autonomous underwater robots.
  - Conducted “at-sea” experiments of experimental sonar systems aboard research vessels.
- May 2012 - Aug 2012** - Mechatronics Laboratory - Case Western Reserve University, Cleveland, OH  
*Undergraduate Research Assistant*
- Researched and developed new methods to use robots to perform laparoscopic surgery tasks.
  - Wrote and deployed software on robotic arms to perform surgical knot-tying (suturing), using MATLAB and C.

## Teaching Experience

- Jan 2017 - Mar 2017** - ECES T680 - Multimedia Forensics and Security  
*Teaching Assistant*
- Sole TA for this graduate-level course. I led the laboratory session each week, held office hours to answer student questions, and graded assignments. I also guest lectured.

## Awards and Grants

- **2019, Drexel College of Engineering Outstanding PhD Student Award**
- **2018, Koerner Family Fellowship recipient**
- **2017, Provosts Award for Best (of 24) Oral Presentation - Drexel Emerging Graduate Scholars Conference**
- **2016, ICASSP 2016 NSF Travel Grant**
- **2011, SAGES Senior Design Grant, Case Western Reserve University**
- **2008-12, President's Merit Scholarship, Case Western Reserve University**

## Service

- **2018-20 Peer reviewer for IEEE Transactions on Information Forensics and Security**
- **2016-20 Peer reviewer for IEEE International Conference on Acoustics Speech and Signal Processing**
- **2016-20 Drexel ECE Day Demonstrator; developed and led interactive demonstrations**
- **2019 co-organized the Drexel ECE Graduate Student Seminar Series**
- **2017 assisted in organizing and planning the ACM IH&MMSec 2017 International Workshop**

## Publications

- **Mayer, Owen**, and Matthew C. Stamm. "Exposing Fake Images with Forensic Similarity Graphs." IEEE Journal of Selected Topics in Signal Processing, 2020 (under review).
- **Mayer, Owen**, Brian Hosler, and Matthew C. Stamm. "Open set video camera model verification." IEEE International Conference on Acoustics, Speech and Signal Processing, 2020.
- Hosler, Brian C., Xinwei Zhao, **Owen Mayer**, et al. "The Video Authentication and Camera Identification Database: A New Database for Video Forensics." IEEE Access, 2019.
- Hosler, Brian, **Owen Mayer**, et al. "A video camera model identification system using deep learning and fusion." IEEE International Conference on Acoustics, Speech and Signal Processing, 2019.
- **Mayer, Owen**, and Matthew Stamm. "Forensic Similarity for Digital Images." IEEE Transactions on Information Forensics and Security, 2019.
- **Mayer, Owen**, Belhassen Bayar, and Matthew C. Stamm. "Learning unified deep-features for multiple forensic tasks." Proceedings of the 6th ACM Workshop on Information Hiding and Multimedia Security, 2018.
- **Mayer, Owen**, and Matthew Stamm. "Accurate and efficient image forgery detection using lateral chromatic aberration." IEEE Transactions on Information Forensics and Security, 2018.
- **Mayer, Owen**, and Matthew Stamm. "Learned forensic source similarity for unknown camera models." IEEE International Conference on Acoustics, Speech and Signal Processing, 2018.
- **Mayer, Owen**, and Matthew C. Stamm. "Countering Anti-Forensics of Lateral Chromatic Aberration." Proceedings of the 5th ACM Workshop on Information Hiding and Multimedia Security, pp. 15-20. ACM, 2017.
- **Mayer, Owen**, and Matthew Stamm. "Improved forgery detection with lateral chromatic aberration." IEEE International Conference on Acoustics, Speech and Signal Processing, 2016.
- **Mayer, Owen**, Diane C. Lim, Allan I. Pack, and Matthew C. Stamm. "Classification of sleep states in mice using generic compression algorithms." IEEE Signal Processing in Medicine and Biology Symposium, 2016.
- **Mayer, Owen**, and Matthew C. Stamm. "Anti-forensics of chromatic aberration." In Media Watermarking, Security, and Forensics, International Society for Optics and Photonics, 2015.
- Abbot, Ted, **Owen Mayer**, Vincent E. Premus, and Philip A. Abbot. "Receiver operating characteristic for a spectrogram correlator-based humpback whale detector-classifier." The Journal of the Acoustical Society of America, 2012.
- Abbot, Ted, **Owen Mayer**, et al. "Analysis of most prominent signal features of humpback whale vocalizations towards the goal of autonomous acoustic classification." The Journal of the Acoustical Society of America, 2009.