

Amanda S. Danko

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Education

- Ph.D.**, Computer Science - University at Albany, State University of New York **5/2015**
Topic: "Visual Saliency Estimation: A Cognitive Pre-Attentive and Context Aware Approach"
Distinguished Dissertation Award
Minor: Mathematics
Advisor: Siwei Lyu, Ph.D.
Committee: George Berg, Ph.D., Ming-Ching Chang, Ph.D., Mei Chen, Ph.D.
- M.S.**, Computer Science - University at Albany, State University of New York **9/2009 - 5/2011**
Topic: "Stochastic Texture Analysis for Content-Based Image Retrieval"
Advisor: Tomek Strzalkowski
- B.S.**, Computer Science - Siena College, Loudonville NY **9/2004 - 5/2007**
Minor: Spanish

Awards & Honors

- Distinguished Dissertation Award - University at Albany **2015**
- Excellence in Teaching by a Graduate Student Award - University at Albany **2015**
- Service to CCI Women in Technology Award - University at Albany **2015**
- Graduate Teaching Assistantship - University at Albany (full tuition coverage) **2009-2011**
- Women in Technology Award - Initiatives For Women **2011**
- Presidential Scholar - Siena College **2004-2007**
- Edward T. McCormick Scholarship for Academic Excellence - Siena College **2004-2007**
- Dean's List - Siena College **2006-2007**

Fields of Research Interest

Visual saliency, machine learning, computer vision, natural image statistics, image processing.
Artificial intelligence, signal processing, computational neuroscience, brain-computer interfaces (BCI).

Teaching Experience

- Lecturer - Computer Science** - University of Texas at San Antonio, TX **8/2016 - present**
•CS-3443 Application Programming
- Instructor of Computer Science** - University at Albany, NY **9/2010 - 8/2011**
•ICSI-201 Introduction to Computer Science
•Sole instructor for Java-based course introducing programming concepts & techniques to over 300 students each semester, in both lecture and lab environments.
•Received the *Excellence in Teaching by a Graduate Student Award*.
- Graduate Teaching Assistant** - University at Albany, NY
•ICSI 210 Discrete Structures **Fall 2009**
•TA responsible for teaching weekly lab sessions, holding office hours, and grading.
•ICSI 201 Introduction to Computer Science (*Lead TA*) **Spring 2010, Fall 2011**
•Lead TA responsible for recruiting and coordinating other TAs, creating grading rubrics, instructing weekly labs, holding office hours, and creating lab exercises.

Experience

Senior Research Engineer

11/2015 - present

USAA - R&D, San Antonio, TX

- Leading teams researching artificial intelligence and biotechnology, and influencing corporate strategies for machine learning and longevity in the next three to ten years.
- Research, prototypes, publications, and patents in signal processing, machine learning, virtual/augmented reality, 3D rendering, and brain-computer interfacing.

Research Engineer

9/2012 - 11/2015

USAA - R&D, San Antonio, TX

- Research, proposals, publication, and technical briefings on image processing, machine learning, deep learning, and data analytics. Prototypes in Matlab, Android, Python, Perl, C, Swift, Objective-C, CUDA, Java, Unity, .Net, JavaScript, and ROS.
- Actively recruited top technical talent at several universities, and especially at the Grace Hopper Celebration for Women in Computing.

Research Assistant

1/2012 - 5/2014

University at Albany Research Foundation, Albany, NY

- Machine Learning & Vision Lab: research and development of technologies in machine learning, natural image statistics, and visual saliency estimation.
- Research in statistical image models in application to texture synthesis, implementing systems, & recording results for NSF-funded grant.

R&D Intern

5/2012 - 8/2012

USAA - Applied Research & Innovation, San Antonio, TX

- Researched, prototyped, and patented a novel image-processing technology.

Software Engineer & Project Manager

4/2008 - 2/2011

Auto/Mate Dealership Systems, Clifton Park, NY

- Developed & maintained server and client applications. Integrated systems for automotive dealerships nationwide. Managed support requests from both customers and internal users.

Information Technology Specialist II Programmer

1/2007 - 4/2008

NYS Department of Taxation & Finance, Albany, NY

- Java developer in eChannels, integrating front-end systems with mainframe back-end.
- Developed accessible JSP user interfaces and Java servlets for the NYS Online Tax Center.

Software Engineer

Summer 2006

Captira Analytical, Albany N.Y.

- Developed software in C# and scripted web crawlers to populate bail bond datasets.

Publications

1. E. Schroeder, N. Walker, A. Danko. *Wearable Ear EEG for Brain Interfacing and Monitoring*. To appear in the proceedings of SPIE BIOS **2017**.
2. G. Fernandez, A. Danko. *Addressing the Vulnerabilities of Pass-Thoughts*. Proceedings of SPIE Defense & Commercial Sensing (DCS), **2016**.
3. A. Danko, G. Fernandez. *My Brain is My Passport. Verify Me*. Proceedings of the IEEE International Conference on Consumer Electronics (ICCE), **2016**.
4. A. Danko. *Visual Saliency Estimation: A Cognitive Pre-Attentive & Context-Aware Approach*. Ph.D. thesis, University at Albany. **2015**.
5. A. Danko, S. Lyu. *Better Together: Fusing Visual Saliency Methods for Retrieving Perceptually Similar Images*. Proceedings of the IEEE International Conference on Consumer Electronics (ICCE), **2015**.
6. A. Danko, S. Lyu. *Fused Methods for Visual Saliency Estimation*. Proceedings of the IS&T SPIE Electronic Imaging, Image Processing: Machine Vision Applications VIII, **2015**.

Patents

- A. Danko, “*Vehicle Identification Number Capture*”, US 9,390,339 2016
- A. Danko, “*Vehicle Identification Number Capture*”, US 9,036,040-0888.01-14538.170 2015

Presentations

- Grace Hopper Celebration of Women in Computing, Houston, TX
 - “*Insecure Thoughts: Biometric EEG for the Real World*” (accepted) 2016
 - “*My Brain is My Passport. Verify Me.*” 2015
- IEEE GlobeCOM, San Diego, CA (accepted)
 - Tutorial: “*Databank Standardization and Tools Toward Brain Communication*” 2015
- IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, NV
 - “*Better Together: Fusing Visual Saliency Methods for Retrieving Perceptually Similar Images*” 2015
- NYC WiC: Women in Computing Conference, NY
 - “*2D-to-3D Image Conversion: Automating Your Virtual Tour*” 2013
 - Panel: “*Careers in Computer Science*” 2011
- New Trends in Computer Science Conference (NTCS), University at Albany, NY
 - “*Bottom-Up Saliency Models Based on Natural Image Statistics*” 2014
 - “*Multi-view Geometry for A Virtual Tour*” 2013
 - “*Texture Analysis & Synthesis*” 2012
 - “*Content-Based Image Retrieval*” 2011
 - “*Natural Image Statistics*” 2010

Posters

- SPIE DCS Defense & Security, Baltimore, MD 2016
 - “*Addressing the Vulnerabilities of Pass-Thoughts*”, with Gabriel Fernandez
- Entertainment Software & Cognitive Neurotherapeutics (ESCoNS) Summit, NeuroGaming Conference 2015
 - “*Convergence of Tools for Brain-Computer Applications*”, with Narisa Chu, Ph.D.
- SPIE IS&T Electronic Imaging, San Francisco, CA 2015
 - “*Fused methods for visual saliency estimation*”, with Siwei Lyu, Ph.D.
- Grace Hopper Celebration of Women in Computing, Portland OR 2011
 - “*CBIR: A System for Content-Based Image Retrieval*”, with Tomek Strzalkowski
- CRA-W Graduate Cohort, Boston, MA 2011
 - “*Methods for Texture Analysis in Content-Based Image Retrieval*”

Professional Service & Experience

- *Technical Program Committee Member* - IEEE ICCE 2016
- *ACM Student Research Competition Judge* - Grace Hopper Conference, Houston TX 2016
- *Journal Reviewer* - Journal of Electronic Imaging (JEI) 2015-present
- *Mentor* - UAlbany Career Advisory Network (UCAN) 2015-present
- *Technical Recruiter*:
 - Grace Hopper Core Team for Women in Computing, USAA 2014-present
 - Purdue University, IN for USAA R&D 2015-present
- *Guest Lecturer*:
 - Purdue University, IN - *Brain Computer Interfaces* 2016
 - Trinity University, TX - *Biometrics and BCI* 2016
 - University at Albany, NY - *Mentoring Women in IT* 2014, 2015
 - Siena College, Loudonville, NY - *Software Engineering, Careers in CS, Computer Vision* 2008-2014
- *Guest Evaluator*, UT Austin Undergraduate Research Forum, College of Natural Sciences 2016
- *Lead Conference Coordinator/Member* - New Trends in Computer Science Conference, UAlbany 2012-2013
- EPISIM Epidemic Simulation research project, University at Albany 2009
 - Implemented algorithms on Hadoop to evaluate simulated effects on social networks from CDC data.