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

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. G. Fernandez, A. Danko. *Addressing the Vulnerabilities of Pass-Thoughts*. Proceedings of SPIE Defense & Commercial Sensing (DCS), **2016**.
2. A. Danko, G. Fernandez. *My Brain is My Passport. Verify Me.* Proceedings of the IEEE International Conference on Consumer Electronics (ICCE), **2016**.
3. A. Danko. *Visual Saliency Estimation: A Cognitive Pre-Attentive & Context-Aware Approach.* Ph.D. thesis, University at Albany. **2015**.
4. 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**.
5. 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 9,036,040-0888.01-14538.170 **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

- *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.