Geneviève Patterson

CONTACT INFORMATION

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CURRENT POSITION

Microsoft Research New England, Cambridge, Massachusetts, USA

Post-Doctoral Researcher **July 2016 – current**

EDUCATION

Brown University, Providence, Rhode Island, USA

PhD Computer Science **September 2010 – May 2016**

- Advisor: Associate Professor James Hays, Georgia Tech College of Computing
- Dissertation: Collective Intelligence: Crowd-Driven Image Understanding

The University of Tokyo, Hongo, Bunkyo-ku, Tokyo

Master of Electrical Engineering **October 2007 – September 2009**

- Advisor: Associate Professor Takafumi Koseki, Dept. of Electrical Eng. and Information Systems
- Dissertation: Fundamental Modeling for Optimal Design of Transverse Flux Motors

The University of Arizona, Tucson, Arizona, USA

BS Mathematics, BS Electrical Engineering (Hons) **August 2003 – May 2007**

PUBLICATIONS

Cashman, D., G. Patterson, A. Mosca, R. Chang, "RNNbow: Visualizing the Learning Process in Recurrent Neural Networks," *VADL 2017: Workshop on Visual Analytics for Deep Learning, IEEE VIS 2017.* Phoenix, AZ, USA. October 2017. *Best Paper.*

Patterson, G., J. Hays, "COCO Attributes: Attributes for People, Animals, and Objects," *European Conference for Computer Vision (ECCV 2016).* Amsterdam, The Netherlands. October 2016.

Lam, D., G. Patterson, "Kaizen: The Crowd Pathologist," *HCOMP 2016, GroupSight workshop.* Austin, TX USA. 2016.

Patterson, G., G. Van Horn, J. Hays, S. Belongie, P. Perona, "Tropel: Crowdsourcing detectors with minimal training," *Human Computation and Crowdsourcing (HCOMP 2015).* San Diego, USA. November 2015. *Best Paper Award Finalist.*

Patterson, G., C. Xu, H. Su, J. Hays, "The SUN Attribute Database: Beyond Categories for Deeper Scene Understanding," *International Journal of Computer Vision.* May 2014, Volume 108, Issue 1-2, pp 59-81.

Patterson, G., G. Van Horn, S. Belongie, P. Perona, J. Hays, "Bootstrapping Fine-Grained Classiers: Active Learning with a Crowd in the Loop," *NIPS 2013, Crowd workshop.* Lake Tahoe, NV USA. Dec 5-10, 2013.

Patterson, G. T. Lin, J. Hays, "Using Humans to Build Mid-Level Features," *CVPR 2013, Scene Understanding Workshop.* Portland, OR USA. June 25-27, 2013.

Xiao, J., J. Hays, B. Russell, G. Patterson, K. Ehinger, A. Torralba, A. Oliva, "Basic level scene understanding: categories, attributes and structures," *Frontiers in Psychology.* August 2013.

Patterson, G., J. Hays, "SUN attribute database: Discovering, annotating, and recognizing scene attributes," *CVPR 2012.* Providence, RI USA. June 16-21, 2012.

Patterson, G., J. Hays, "Building a Taxonomy of Attributes for Fine-Grained Scene Understanding," *CVPR 2011, Fine Grained Computer Vision Workshop.* Colorado Springs, USA. June 20-25, 2011.

Patterson, G., T. Koseki, Y. Aoyama, K. Sako, "Simple Modeling and Prototype Experiments for a New High-Thrust, Low-Speed Permanent Magnet Disk Motor," *Proc. 12th International Conference on Electrical Machines and Systems*, Tokyo, Japan. Nov 2009.

Patterson, G., T. Koseki, "Fundamental Modeling for Optimal Design of Transverse Flux Motors," *The 2009 Annual Meeting of the IEE Japan*, Vol. 5, pp.17-18, Sapporo, Japan, March 2009.

Koseki, T., G. Patterson, T. Suzuki, "Visual State Feedback Digital Control of a Linear Synchronous Motor using Generic Video-Camera Signal," *Proc. 11th International Conference on Electrical Machines and Systems*, Wuhan, China. Oct 2008.

Lee K. S., Kim C. S., Kim R. K., Patterson G., Kolesik M., Moloney J. V., Peyghambarian N., "Dual-wavelength external cavity laser with a sampled grating formed in a silica PLC waveguide for terahertz beat signal generation," *Applied Physics B, Lasers and Optics*, Vol. 87 No. 2. April 2007.

In Submission/ To Appear

To Appear: Peck, D., G. Patterson, L. Mackey, V. Syrgkanis, "Visualizing the differences in visual primitives used by CNNs and radiologists," *SPIE Medical Imaging*. Houston, TX, USA. February 2018.

To Appear: Patterson, G., D. Greene, "How AI Sees Crime," *IEEE Spectrum Magazine*.

In Submission: Kaspar, A., G. Patterson, C. Kim, Y. Aksoy, W. Matusik. "Crowd-Guided Ensembles: How Can We Choreograph Crowd Workers for Video Segmentation?"

Books

Visual Attributes, Editors: Rogerio Schmidt Ferris, Christoph Lampert, Devi Parikh, Chapter 12.

Grants

Patterson, G., D. Merck, J. Hays, "CVD^2: Computer Vision Detection for Cerebrovascular Disease," *Brown University BIBS/NPNI Research Award.* June 2015.

Teaching Experience

Instructor, *Deep Learning for Computer Vision*, Tufts University, COMP-150DL, Spring 2017.
http://comp150dl.github.io.

Instructor, *Data-driven Computer Vision*, Brown University, CSCI 2951T, Spring 2016.
http://cs.brown.edu/courses/csci2951-t/.

Industry Experience

Clarifai, New York, New York, USA

Internship **December 2013 – February 2014**

Member of research and development team for new computer vision products.

IBM Corporation, Tucson, Arizona, USA

Software Developer, Internship **May 2005 – September 2007**

Developed graphical user interface and network statistics graphing software for IBM enterprise class servers.

Honours and Awards

HCOMP 2015 Best Paper Award Runner Up
Finalist - Facebook Graduate Research Fellowship 2013
National Defense Science and Engineering Graduate Fellowship 2010-2013
ICEMS 2009 Conference Award for Outstanding Paper and Technical Excellence
Japanese Ministry of Education Monbukagakusho Scholarship 2007 - 2009
University of Arizona President's Award for Excellence 2003-2007
University of Arizona Provost Scholarship 2003 - 2007

Community Activities

GroupSight Second Workshop on Human Computation for Image and Video Analysis HCOMP 2017, workshop co-organizer
GroupSight Workshop on Human Computation for Image and Video Analysis HCOMP 2016, workshop co-organizer
COCO Challenge ICCV 2017, workshop co-organizer
MS COCO Challenge ECCV 2016, workshop co-organizer
MS COCO Challenge ICCV 2015, workshop co-organizer
IgniteCS Instructor Sping 2015 (Middle School introduction to programming course)

Ivy Labs Instructor - Computer Science History 2014, 2015 (Summer program for international HS students at Brown University)
Faculty Graduate Liaison, Department of Computer Science, Brown University Jan 2014-Jan 2015
LDV Vision Summit 2014, 2015 Challenge Coordinator
GirlsGetMath 2014 (Brown University High school summer program) Instructor
Summer@Brown 2012 (Brown University High school summer program) Guest Lecturer
Brown University Artemis Program 2012, 2014 Guest Lecturer
MIT Splash Program 2010 Instructor, Topic: Trains in Japan

References

Available on request from:

- Professor James Hays (Georgia Tech)
- Professor Serge Belongie (Cornell Tech)
- Dr. Adam Kalai (MSR NE)
- Professor Pietro Perona (Caltech)
- Dr. Lester Mackey (MSR NE)

Languages

English (native), Spanish (fluent), Japanese (intermediate).