# Geneviève Patterson


CONTACT INFORMATION

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CURRENT POSITION

**TRASH Inc.**, Brooklyn, NY, USA

*Chief Scientist* **July 2018 - current**

PREVIOUS ACADEMIC POSITIONS

**Microsoft Research New England**, Cambridge, Massachusetts, USA

*Post-Doctoral Researcher* **July 2016 – June 2018**

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

Gultchin, L., Patterson, G., Baym, N., Swinger, N., & Kalai, A. "Humor in Word Embeddings: Cockamamie Gobbledegook for Nincompoops." *International Conference on Machine Learning.* May 2019.

Wu, J., B Zhou, D Peck, S Hsieh, V Dialani, L Mackey, G Patterson, "Deepminer: Discovering interpretable representations for mammogram classification and explanation," *arXiv.* preprint arXiv:1805.12323.

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

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.

Kaspar, A., G. Patterson, C. Kim, Y. Aksoy, M. A. Elgharib, W. Matusik. "Crowd-Guided Ensembles: How Can We Choreograph Crowd Workers for Video Segmentation?" *CHI 2018.* Montreal, Canada. April 2018.

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 Classifiers: 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.

## Books

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

## Grants

Patterson, G., "Filmmaking for Everyone: Computational Video Editing." NSF SBIR Phase I. January 2018 - October 2018.

## 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)