

# GÖKER ERDOĞAN

103 Longwood Dr. Apt. A  
Charlottesville, VA 22903, USA  
✉ gokererdogan@gmail.com  
🌐 <http://gokererdogan.com>  
☎ +1 585.719.7987

## EDUCATION AND PROFESSIONAL EXPERIENCE

---

### Cogitai, Inc.

AI Software Engineer

August 2017 - present

### University of Rochester

Joint Ph.D. in Brain and Cognitive Sciences and Computer Science

June 2017

Advisor: Dr. Robert A. Jacobs

M.A. in Brain and Cognitive Sciences

2012-2015

### Center for Brains, Minds, and Machines Woods Hole, MA, USA

Brains, Minds, and Machines Summer Course

May-June 2014

### Boğaziçi University Istanbul, Turkey

M.S. in Computer Engineering

2010-2012

Thesis: Spectral Methods for Outlier Detection

Advisor: Dr. Ethem Alpaydin

### Istanbul Technical University, Istanbul, Turkey

B.S. in Computer Engineering

2003-2008

Advisor: Dr. Feza Buzluca

### Fachhochschule Konstanz, Konstanz, Germany

Erasmus Exchange Student

2006-2007

## PUBLICATIONS

---

### Journal Publications

1. **Erdogan G.**, Jacobs R. A. (2017) Visual Shape Perception as Bayesian Inference of 3D Object-centered Shape Representations. *Psychological Review*. pdf
2. **Erdogan G.**, Chen, Q., Garcea F. E., Mahon B. Z., Jacobs R. A. (2016) Multisensory Part-Based Representations of Objects in Human Lateral Occipital Complex. *Journal of Cognitive Neuroscience*. Vol. 28, No. 6, pp. 869-881. pdf
3. **Erdogan G.**, Yildirim I., Jacobs R. A. (2015) From Sensory Signals to Modality-Independent Conceptual Representations: A Probabilistic Language of Thought Approach. *PLoS Comput Biol* 11(11): e1004610. pdf

### Conference Proceedings

1. **Erdogan G.**, Jacobs R. A. (2016) A 3D shape Inference Model Matches Human Visual Object Similarity Judgments Better Than Deep Convolutional Neural Networks. Papafragou, A., Grodner, D., Mirman, D., & Trueswell, J.C. (Eds.) *Proceedings of the 38th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society. pdf
2. **Erdogan G.**, Yildirim I., Jacobs R. A. (2015). An Analysis-by-Synthesis Approach to Multisensory Object Shape Perception. Multimodal Machine Learning Workshop. NIPS 2015. pdf

3. **Erdogan G.**, Yildirim I., Jacobs R. A. (2014). Transfer of Object Shape Knowledge across Visual and Haptic Modalities. In P. Bello, M. Guarini, M. McShane, & B. Scassellati (Eds.), *Proceedings of the 36th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society. pdf

## PREVIOUS PROFESSIONAL EXPERIENCE

---

**Pfizer Pharmaceuticals Turkey**, Istanbul, Turkey September 2008 - September 2010  
Corporate Applications Specialist

*As a member of EME Solution Center, I was responsible for management of new projects and routine releases planned for different enterprise-wide systems. I have taken roles in every step of project management from requirements analysis, software design, implementation, testing and deployment to vendor management.*

**IBM Turkey**, Istanbul, Turkey June 2006 - August 2006  
Project Intern

## PROGRAMMING EXPERIENCE

---

🔗 <https://github.com/gokererdoğan>

Python, Matlab, R, C/C++, .NET, SQL, Web programming.

### Sample Projects

- Implementation of various deep generative models. *Implemented in Python. Uses MXNet deep learning library.*
- Adaptive MCMC with Policy Gradient. *Implemented in Python, uses autograd for automatic differentiation.*
- Infer3DShape: Probabilistic inference of 3D shape from 2D images. *Implemented in Python, uses vtk for rendering 3D objects.*
- mcmclib: Markov Chain Monte Carlo library. *Implemented in Python.*
- rllib: Reinforcement learning library. *Implemented in Python, uses theano to provide neural network function approximators.*
- Outlier Detection Toolbox. *Implemented in MATLAB.*

## INVITED TALKS

---

*Center for Brains, Minds, and Machines. MIT (Boston, USA)* November 2016  
Shape Perception as Probabilistic Inference of 3D Shape.

*38th Annual Cognitive Science Society Meeting (Philadelphia, USA)* August 2016  
A 3D shape inference model matches human visual object similarity judgments better than deep convolutional neural networks.

*NIPS Multimodal Learning Workshop (Montreal, Canada)* December 2015  
An Analysis-by-Synthesis Approach to Multisensory Object Shape Perception.

🔗 <https://youtu.be/co8eAx6tK7Y>

## TEACHING EXPERIENCE

---

### **Lecturer, Pontificia Universidad Javeriana**

Introduction to Machine Learning, 26-30 Nov. 2018

*20 hour class intended as an introduction to Machine Learning.*

Course description and lecture notes

### **Teaching Assistant, University of Rochester**

BCS183: Animal Minds, Fall 2015

BCS153: Cognition, Spring 2015

BCS111: Foundations of Cognitive Science, Spring 2014

## HONORS AND AWARDS

---

National Graduate Study Scholarship granted by Scientific and Technological Research Council of Turkey  
*2010-2012*

Istanbul Technical University Undergraduate Honor Scholarship *2003-2008*

Graduated with Honors in 4<sup>th</sup> place from Istanbul Technical University Computer Engineering Department

41<sup>st</sup> in Graduate Entrance Exam among 300.000 students

272<sup>nd</sup> in Undergraduate Entrance Exam among 1.000.000 students

## OTHER INFORMATION

---

**Languages:** English (fluent), Turkish (native).

**Citizenship:** Turkish.

## REFERENCES

---

Available upon request.