

GÖKER ERDOĞAN

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EDUCATION AND PROFESSIONAL EXPERIENCE

Cogitai, Inc.

AI Research Scientist

August 2017 - present

University of Rochester

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

June 2017

Thesis: Shape Perception as Bayesian Inference of Modality-Independent Part-Based 3D
Object-Centered Shape Representations

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/gokererdogan>

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

Sample Projects

- Implementation of various deep generative models including VAE, ConvDRAW, and GQN..
Implemented in Python. Uses MXNet deep learning library.
- 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

Lecturer, Charlottesville Machine Learning Meetup

Introduction to Machine Learning, October 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 4th place from Istanbul Technical University Computer Engineering Department

41st in Graduate Entrance Exam among 300.000 students

272nd in Undergraduate Entrance Exam among 1.000.000 students

OTHER INFORMATION

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

Citizenship: Turkish.

REFERENCES

Available upon request.