

# Melih Barsbey

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## SUMMARY

Computer engineering PhD student with a research focus on probabilistic machine learning: causal inference, model selection in graphical models, and matrix/tensor factorizations. Advised by Prof. A. Taylan Cemgil of Boğaziçi University (on research leave in Google DeepMind London). Also an industry practitioner with experience on high dimensional financial data and time series analysis. Background in research and statistical inference in cognitive science.

## EDUCATION

### Boğaziçi University, Istanbul, Turkey

- Ph.D. in Computer Engineering Sep 2016 – Present
  - Focus: Machine learning, Bayesian statistics
  - Advisor: Prof. A. Taylan Cemgil
  - Proficiency completed in Jun 2018
  - Cumulative GPA: 4.00 / 4.00
- M.A. in Psychology Sep 2011 – Aug 2014
  - Focus: Cognitive science of mental representations
  - Cumulative GPA: 4.00 / 4.00
- B.A. in Psychology Sep 2007 – Jun 2011
  - Cumulative GPA: 3.79 / 4.00
  - Change of major at the end of first year from Industrial Engineering to Psychology with a GPA of 3.52 / 4.00

### Robert College, Istanbul, Turkey

- High School

Sep 2002 – Jun 2007

## BUSINESS EXPERIENCE AND ACADEMIC APPOINTMENTS

### Arute Solutions Software Consulting Inc., Istanbul, Turkey

- Senior Data Scientist Sep 2017 – Present
  - Time series analysis on financial interaction data
  - Statistical learning on high dimensional data sets

### Acibadem University, Istanbul, Turkey

- Instructor, Department of Psychology Nov 2014 – Sep 2017
  - Courses Taught: Descriptive and Inferential Statistics, Psycholinguistics

### Boğaziçi University, Istanbul, Turkey

- Research Assistant, Department of Psychology Nov 2012 – Sep 2014
  - Courses Assisted: Statistics for Behavioral Sciences

### University of California, Berkeley, California, U.S.A.

- Visiting Researcher, Department of Psychology Aug 2012 – Oct 2012
  - Researcher in Concepts and Cognition Lab

## AWARDS & SCHOLARSHIPS

- University Entrance Exam; Science and Mathematics National Placement: 50th. *Among 1,600,000 participants.* 2007
- GRE Scores – Verbal Reasoning: 170 / 170. Quantitative Reasoning: 170 / 170. Analytical Writing: 5.0 / 6.0 2014
- M.A. Scholarship from The Scientific and Technological Research Council of Turkey (TÜBİTAK) 2012 – 2014
- PhD Scholarship from The Scientific and Technological Research Council of Turkey (TÜBİTAK) 2016 – Present

## PUBLICATIONS AND PREPRINTS

### CONFERENCES AND OTHER SCIENTIFIC MEETINGS

- [6] Kurutmaz, M. B.\*, **Barsbey, M.\***, Cemgil, A. T., Yıldırım, S., & Şimşekli, U. *Bayesian Model Selection for Identifying Markov Equivalent Causal Graphs*. Paper presented at *Advances in Approximate Bayesian Inference*, 2019. \*Equal contribution
- [5] Kurutmaz, M. B., Cemgil, A. T., Şimşekli, U., **Barsbey, M.**, & Yıldırım, S. *Bayesian Learning of Non-Negative Matrix/Tensor Factorizations by Simulating Pólya Urns*. Paper presented at Symposium on Advances in Approximate Bayesian Inference, Montréal, Canada, Dec 2018.

- [4] **Barsbey, M.** *Heuristics in an agent-based simulation: Investigating the effect of model complexity on learning performance.* Poster presented at Summer Institute on Bounded Rationality, Berlin, Germany, Jul 2017.
- [3] **Barsbey, M.,** & Lombrozo, T., *Linguistic differences in explanation requests and their effects on the evaluation of explanations: the case of English and Turkish.* Poster presented at the annual meeting of the Cognitive Science Society, Berlin, Germany. Aug 2013.
- [2] **Barsbey, M.,** Coşkun, T., Selçuk, Ş., & Ülkümen, A. D., *Mortality Salience and Self-Defining Memories.* Poster presented at the annual meeting of Center on Autobiographical Memory Research, Aarhus, Jun 2013.
- [1] **Barsbey, M.,** Aktan, D. N., & Bayram, O., *The effect of ambient temperature on decision making processes.* Poster presented at the biennial meeting of the Turkish Psychology Society, Istanbul, Turkey, Apr 2012.

#### RECENT SUBMISSIONS

- [1] Cemgil, A. T., Kurutmaz, M. B., Yildirim, S., **Barsbey, M.,** Simsekli, U. *Bayesian Allocation Model: Model Selection for Graphical Models with Latent Variables using Polya Urns*, submitted to *Bayesian Analysis*, 2019.

#### PREPRINTS

- [2] Cemgil, A. T., Kurutmaz, M. B., Yildirim, S., **Barsbey, M.,** Simsekli, U. *Bayesian Allocation Model: Inference by Sequential Monte Carlo for Nonnegative Tensor Factorizations and Topic Models using Polya Urns.* *arXiv preprint arXiv:1903.04478*. Mar 2019.
- [1] **Barsbey, M.** *Perceptual simulations beyond the sentence: the effect of narrative shifts on perceptual simulations.* Unpublished master's thesis. Boğaziçi University, Istanbul, Turkey, Aug 2014.

#### PROGRAMMING AND SOFTWARE SKILLS

- Python, Julia, C/C++
- TensorFlow, Python scientific computation libraries
- MATLAB, SQL, L<sup>A</sup>T<sub>E</sub>X, SPSS

#### PROFESSIONAL ACTIVITIES

- Summer Institute on Bounded Rationality: Predictions under Uncertainty,**  
Max Planck Institute on Human Development, Berlin, Germany
- Participant & Researcher

2017

#### LANGUAGES

- Turkish (Native)
- English (Advanced)
- German (Intermediate)

[CV compiled on 2020-01-09]