Ömer Deniz Akyıldız

Email: omerdeniz.akyildiz@uc3m.es
Web: http://akyildiz.me

EDUCATION

PhD, Signal Processing, Carlos III University of Madrid, Spain. Ongoing
Thesis: Computational methods for high dimensional inference and optimization
Supervisor: Joaquin Miguez.

MSc, Telecommunications Engineering, Istanbul Technical University, Turkey. 2012
Thesis Title: A structured sparse decomposition method for audio signals

BSc, Telecommunications Engineering, Istanbul Technical University, Turkey. 2010
Thesis Title: Anisotropic diffusion in image processing

PAPERS

1. *The Incremental Proximal Method: A Probabilistic Perspective*, Ö. D. Akyıldız, V. Elvira, J. Miguez, ICASSP 2018.
2. *A probabilistic interpretation of replicator-mutator dynamics*, Ö. D. Akyıldız, arXiv:1712.07879.
3. *Adaptive noisy importance sampling for stochastic optimization*, Ö. D. Akyıldız, I. P. Marino, J. Miguez, IEEE CAMSAP 2017.
4. *Nudging the Particle Filter*, Ö. D. Akyıldız, J. Miguez, arXiv:1708.07801.
5. *On the Relationship between Online Optimizers and Recursive Filters*, Ö. D. Akyıldız, V. Elvira, J. Fernandez-Bes, J. Miguez, NIPS Workshop on Optimizing the Optimizers, Barcelona, Spain, 2016.
6. *Matrix Factorisation with Linear Filters*, Ö. D. Akyıldız, Preprint, arXiv:1509.02088, 2015.
7. *Online Matrix Factorization via Broyden Updates*, Ö. D. Akyıldız, Preprint, arXiv:1506.04389, 2015.
8. *Primal-Dual Algorithms for Audio Decomposition Using Mixed Norms*, İ. Bayram, Ö. D. Akyıldız, Journal of Signal, Image and Video Processing, 2014.
9. *An Analysis Prior Based Decomposition Method for Audio Signals*, Ö. D. Akyıldız and İ. Bayram, EUSIPCO 2012.

WORK EXPERIENCE

Research Assistant, Carlos III University of Madrid, Spain. 2015 –
with Signal Processing Group (GTS).
on *stochastic filters; Bayesian inference; Monte Carlo methods; stochastic optimisation.*

Visiting Researcher, Imperial College London, UK. Jan. 2018 – March 2018
under the supervision of Dan Crisan, Department of Mathematics.
on *stochastic filtering and optimization.*

Visiting Research Scientist, Fraunhofer HHI, Berlin, Germany. August 2017
on *proximal forward-backward splitting methods; sparse dictionary learning.*

Research Assistant, Boğaziçi University, Istanbul, Turkey. 2012 – 2015
under the supervision of A. Taylan Cemgil with Statistical Inference Group.
on *Bayesian statistics; machine learning; probabilistic inference.*

Quantitative Researcher, algosis inc. 2014 – 2015
on *financial time series analysis; portfolio optimization; algorithmic trading.*

	Research Assistant, Istanbul Technical University, Turkey.	2010 – 2012
	on *convex optimisation; machine learning; signal processing.*	

SKILLS MATLAB, C, Python, LaTeX.

VISITS &
CONFERENCES

BayesComp 2018, Barcelona, Spain.	26-28 March 2018
Bayes Data Science for Health, Warwick University, UK	21 March 2018
SMC 2017 Workshop, Uppsala, Sweden.	29 August – 1 September 2017
NIPS Conference, Barcelona, Spain.	5-10 December 2016
European Workshop on Reinforcement Learning, Barcelona.	3-4 December 2016
IEEE Workshop on Statistical Signal Processing, Palma, Spain.	26-29 June 2016

School of Mathematical Sciences, Queen Mary University of London, UK.
- 14-24 Dec. 2015 — 1-5 Feb. 2016 — 16-20 May 2016

Sequential Monte Carlo Workshop, Imperial College London, UK.	21-23 Dec. 2015

TEACHING
EXPERIENCE

Teaching Assistant (Voluntarily), Boğaziçi University, Istanbul, Turkey.	
Monte Carlo methods (graduate course) × 3	2013 – 2015
in Dept. of Computer Engineering.	
Bayesian statistics and machine learning (graduate course) × 2	2013 – 2014
in Dept. of Computer Engineering.	

GRADUATE
SCHOOLS

Dobbiaco Summer School on Probabilistic Numerics	19-23 June 2017
Dobbiaco, Italy.	
Machine Learning Summer School	13-24 July 2015
Max Planck Institute of Intelligent Systems, Tübingen, Germany.	
(accepted with extremely competitive full financial support.)	
Foundations and Advances in Stochastic Filtering	22-26 June 2015
Barcelona, Spain.	
Lectures on Large Deviations and Probability Models	1-8 Sept. 2013
Mathematics Village, Şirince, Turkey.	

HONORS

• Protel A.Ş. Graduate Fellowship	2010 – 2012
• Istanbul Metropolitan Municipality Undergraduate Fellowship	2005 – 2008
• Premiership Undergraduate Fellowship	2005 – 2010

TALKS

• Nudging the particle filter, at Imperial College London	Feb. 16, 2018
• Adaptive noisy importance sampling, at UC3M	November 28, 2017
• A filtering approach to stochastic optimisation, at UC3M	June 6, 2017
• Filtering in high-dimensional spaces, at UC3M	November 14, 2016

- Matrix Factorisation with Linear Filters, at UC3M   October 22, 2015
- Particle methods for parameter estimation, at Bogazici   March 31, 2015
- An online EM algorithm and applications, at Bogazici   November 26, 2013
- Stochastic approximations, at Bogazici   March 26, 2013
- Learning Linear Dynamical Systems, at Bogazici   January 21, 2013

OTHER   I maintain a research blog: `http://www.almoststochastic.com`.