

EDUCATION *PhD*, Signal Processing, Carlos III University of Madrid, Spain. Ongoing
Thesis: Sequential and adaptive Bayesian computation for inference and optimization
Supervisor: Joaquín Míguez.

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

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

PAPERS

1. *Parallel sequential Monte Carlo for stochastic optimization*, Ö. D. Akyıldız, D. Crisan, J. Miguez, [arXiv:1811.09469](https://arxiv.org/abs/1811.09469).
2. *The Incremental Proximal Method: A Probabilistic Perspective*, Ö. D. Akyıldız, V. Elvira, J. Miguez, ICASSP 2018.
3. *A probabilistic interpretation of replicator-mutator dynamics*, Ö. D. Akyıldız, [arXiv:1712.07879](https://arxiv.org/abs/1712.07879).
4. *Adaptive noisy importance sampling for stochastic optimization*, Ö. D. Akyıldız, I. P. Marino, J. Miguez, IEEE CAMSAP 2017.
5. *Nudging the particle filter*, Ö. D. Akyıldız, J. Miguez, [arXiv:1708.07801](https://arxiv.org/abs/1708.07801).
6. *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.
7. *Matrix Factorisation with Linear Filters*, Ö. D. Akyıldız, Preprint, [arXiv:1509.02088](https://arxiv.org/abs/1509.02088), 2015.
8. *Online Matrix Factorization via Broyden Updates*, Ö. D. Akyıldız, Preprint, [arXiv:1506.04389](https://arxiv.org/abs/1506.04389), 2015.
9. *Primal-Dual Algorithms for Audio Decomposition Using Mixed Norms*, İ. Bayram, Ö. D. Akyıldız, Journal of Signal, Image and Video Processing, 2014.
10. *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 –
within Signal Processing Group (GTS), Dept. of Signal Theory and Communications.
on *stochastic filters; Bayesian inference; Monte Carlo methods; stochastic optimisation*.

Visiting Researcher, Alan Turing Institute, London, UK. June – August 2018
within the programme Data-Centric Engineering, hosted by Chris Oates.
on *Bayesian inference; variational methods; probabilistic numerics*.

Visiting Research Scientist, Fraunhofer HHI, Berlin, Germany. May – June 2018
within Signal and Information Processing Group.
on *machine learning applied to vehicular communications*.

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

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 optimisation; algorithmic trading*.

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

SKILLS

MATLAB, C, Python, LaTeX.

VISITS & CONFERENCES

Bayesian Comp. for High-Dimensional Stat. Models, Singapore. 27-31 Aug. 2018

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, Universidad Carlos III, Madrid, Spain. Fall 2018
Systems and Signals
in Dept. of Signal Theory and Communications.

Teaching Assistant (Voluntarily), Boğaziçi University, Istanbul, Turkey. 2013 – 2015
Monte Carlo methods (graduate course) × 3
in Dept. of Computer Engineering.

Bayesian statistics and machine learning (graduate course) × 2 2013 – 2014
in Dept. of Computer Engineering.

PROFESSIONAL ACTIVITIES

Reviewed for the following journals and conferences: IEEE Transactions on Signal Processing; IEEE Signal Processing Letters; Digital Signal Processing, Elsevier; EURASIP Journal on Image and Video Processing; CAMSAP 2017.

GRADUATE SCHOOLS

Dobbiasco Summer School on Probabilistic Numerics 19-23 June 2017
Dobbiasco, Italy.

Spring School and Workshop on Volatility Dynamics 10-13 March 2017
Bernoulli Center, EPFL, Lausanne, Switzerland.

Summer School on Uncertainty Quantification for Applied Problems 4-8 July 2016
Basque Center for Applied Mathematics, Bilbao, Spain.

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
Nesin Mathematics Village, Şirince, Turkey.

Applied Mathematics Summer School 22-29 August 2011
Nesin 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 UC3M Sept. 25, 2018
- 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>.