

**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](https://arxiv.org/abs/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](https://arxiv.org/abs/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](https://arxiv.org/abs/1509.02088), 2015.
7. *Online Matrix Factorization via Broyden Updates*, Ö. D. Akyıldız, Preprint, [arXiv:1506.04389](https://arxiv.org/abs/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 –  
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*.

	<i>Research Assistant</i> , Istanbul Technical University, Turkey. on <i>convex optimisation; machine learning; signal processing</i> .	2010 – 2012
<b>SKILLS</b>	MATLAB, C, Python, LaTeX.	
<b>VISITS &amp; CONFERENCES</b>	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
<b>TEACHING EXPERIENCE</b>	<i>Teaching Assistant</i> (Voluntarily), Boğaziçi University, Istanbul, Turkey. Monte Carlo methods (graduate course) × 3 in Dept. of Computer Engineering.	2013 – 2015
	Bayesian statistics and machine learning (graduate course) × 2 in Dept. of Computer Engineering.	2013 – 2014
<b>GRADUATE SCHOOLS</b>	<i>Dobbiaco Summer School on Probabilistic Numerics</i> Dobbiaco, Italy.	19-23 June 2017
	<i>Machine Learning Summer School</i> Max Planck Institute of Intelligent Systems, Tübingen, Germany. (accepted with extremely competitive full financial support.)	13-24 July 2015
	<i>Foundations and Advances in Stochastic Filtering</i> Barcelona, Spain.	22-26 June 2015
	<i>Lectures on Large Deviations and Probability Models</i> Mathematics Village, Şirince, Turkey.	1-8 Sept. 2013
<b>HONORS</b>	<ul style="list-style-type: none"> <li>• Protel A.Ş. Graduate Fellowship</li> <li>• Istanbul Metropolitan Municipality Undergraduate Fellowship</li> <li>• Premiership Undergraduate Fellowship</li> </ul>	<p>2010 – 2012</p> <p>2005 – 2008</p> <p>2005 – 2010</p>
<b>TALKS</b>	<ul style="list-style-type: none"> <li>• Nudging the particle filter, at Imperial College</li> <li>• Adaptive noisy importance sampling, at UC3M</li> <li>• A filtering approach to stochastic optimisation, at UC3M</li> <li>• Filtering in high-dimensional spaces, at UC3M</li> </ul>	<p>Feb. 16, 2018</p> <p>November 28, 2017</p> <p>June 6, 2017</p> <p>November 14, 2016</p>

- 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>.