

# Andreas Argyriou

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## Research Interests

Machine learning, kernel methods, multitask and transfer learning, recommendation systems, sparse recovery, convex optimization, large scale algorithms.

## Academic Employment

**Research Assistant Professor**, 2009 – present  
**Toyota Technological Institute at Chicago**

**Research fellow**, 2007 – 2009  
**University College London**  
Department of Computer Science  
Centre for Computational Statistics and Machine Learning  
*Supervisor: Massimiliano Pontil*

## Education

**PhD in Computer Science**, 2004-2007  
**University College London**  
*Thesis supervisor: Massimiliano Pontil*

**MSc in Intelligent Systems**, 2003-2004  
**University College London**  
*Thesis supervisor: Zoubin Ghahramani*

**MEng in Electrical Engineering and Computer Science**  
**BSc in Computer Science and Engineering**, 1991-1997  
**Massachusetts Institute of Technology**

## Journal Publications

- On Spectral Learning. A. Argyriou, C. A. Micchelli and M. Pontil. *Journal of Machine Learning Research*, 11:935-953, 2010.
- When Is There a Representer Theorem? Vector versus Matrix Regularizers. A. Argyriou, C. A. Micchelli and M. Pontil. *Journal of Machine Learning Research*, 10:2507-2529, 2009.
- Convex Multi-Task Feature Learning. A. Argyriou, T. Evgeniou and M. Pontil. *Machine Learning*, 73, 3, 243-272, 2008.

## Refereed Conference Proceedings

- A General Framework for Structured Sparsity via Proximal Optimization. A. Argyriou, L. Baldassarre, J. Morales and M. Pontil. *AI & Statistics, 2012 (to appear)*.
- Exploiting Unrelated Tasks in Multi-Task Learning. B. Romera-Paredes, A. Argyriou, N. Berthouze and M. Pontil. *AI & Statistics, 2012 (to appear)*.
- An Algorithm for Transfer Learning in a Heterogeneous Environment. A. Argyriou, A. Maurer and M. Pontil. *European Conference on Machine Learning (ECML), 2008*.
- A Spectral Regularization Framework for Multi-Task Structure Learning. A. Argyriou, C. A. Micchelli, M. Pontil and Y. Ying. *Advances in Neural Information Processing Systems (NIPS), 2007*.
- Multi-Task Feature Learning. A. Argyriou, T. Evgeniou and M. Pontil. *Advances in Neural Information Processing Systems (NIPS), 2006*.
- A DC-Programming Algorithm for Kernel Selection. A. Argyriou, R. Hauser, C. A. Micchelli and M. Pontil. *International Conference on Machine Learning (ICML), 2006*.
- Combining Graph Laplacians for Semi-Supervised Learning. A. Argyriou, M. Herbster and M. Pontil. *Advances in Neural Information Processing Systems (NIPS), 2005*.
- Learning Convex Combinations of Continuously Parameterized Basic Kernels. A. Argyriou, C.A. Micchelli and M. Pontil. *Conference on Learning Theory (COLT), 2005*.

## Preprints

- A Regularization Approach for Prediction of Edges and Node Features in Dynamic Graphs. E. Richard, N. Vayatis, A. Argyriou and T. Evgeniou. *2011*.
- Efficient First Order Methods for Linear Composite Regularizers. A. Argyriou, C. A. Micchelli, M. Pontil, L. Shen and Y. Xu. *2010*.
- A Study of Convex Regularizers for Sparse Recovery and Feature Selection. A. Argyriou. *2010*.

In total 700 citations (according to Google Scholar)

## Theses

- Learning to Integrate Data from Different Sources and Tasks. *PhD Thesis, Department of Computer Science, University College London, 2007*.
- Efficient Approximation Methods for Harmonic Semi-Supervised Learning. *MSc Intelligent Systems Thesis, University College London, 2004*.

## Invited Talks

- Department of Statistics Seminar Series. University of Chicago, June 2011.
- Spring Research Conference on Statistics in Industry and Technology. Northwestern University, June 2011.
- Department of Mathematics. City University of Hong Kong, June 2011.
- Department of Mathematics. Sun Yat-Sen University, June 2011.
- INRIA, Laboratoire d' Informatique de l' Ecole Normale Supérieure. Paris, November 2010.
- INSPIRE 2010 Conference on Information Representation and Estimation. University College London, September 2010.
- Inverse Problems in Data Driven Modeling. Radon Institute for Computational and Applied Mathematics, Linz, Austria, July 2010.
- Seminar Meeting of Toyota Technological Institute and Department of Statistics. University of Chicago, May 2010.
- NIPS Workshop - Kernels for Multiple Outputs and Multi-task Learning: Frequentist and Bayesian Points of View. Whistler, Canada, December 2009.
- Department of Statistics. Purdue University, December 2009.
- Max Planck Institut Informatik. Saarbrücken, Germany, July 2009.
- Max Planck Institute for Biological Cybernetics. Tübingen, Germany, July 2009.
- European Conference on Operational Research. Bonn, Germany, July 2009.
- Sparsity in Machine Learning and Statistics Workshop. Cumberland Lodge, UK, April 2009.
- Kernel Learning Workshop in Neural Information Processing Systems Conference. Whistler, Canada, December 2008.
- Department of Computer Science. University of Bristol, October 2008.
- Open House on Multi-Task and Complex Outputs Learning. University College London, July 2006.

- Academic Service**
- Area chair for the *Neural Information Processing Systems (NIPS) 2011* program committee.
  - Regular reviewer for the *Journal of Machine Learning Research*, *Machine Learning*, *Neural Information Processing Systems (NIPS)*, *International Conference on Machine Learning (ICML)*, *Conference on Learning Theory (COLT)*, *Artificial Intelligence and Statistics (AISTATS)*.
  - Have reviewed for *Artificial Intelligence*, *IEEE Transactions on Image Processing*, *EURASIP Journal on Advances in Signal Processing*, *Pattern Analysis & Applications Journal*, *Statistics and Computing*, *Advances in Computational Mathematics*, *Transactions on Pattern Analysis and Machine Intelligence*.
  - Member of the program committee of *OPT 2010 and OPT 2011*, *International Workshops on Optimization for Machine Learning (NIPS)*.
  - Member of the organizing committee of *Tensors, Kernels, and Machine Learning Workshop*, Whistler B.C., December 2010.
  - Organized *Machine Learning Seminar*, Toyota Technological Institute at Chicago, autumn 2011.

- Teaching Experience**
- **Machine Learning.** Toyota Technological Institute at Nagoya, spring 2011. Guest lecturer (remotely).
  - **TTIC 31020 - Introduction to Statistical Machine Learning.** Toyota Technological Institute at Chicago, autumn 2010. Guest lecturer.
  - **GI13/M050 - Advanced Topics in Machine Learning.** MSc in Intelligent Systems, University College London, spring 2009. Constructed and delivered one half of the lectures.
  - **GI13/4C60 - Advanced Topics in Machine Learning.** University College London, spring 2006. Instructor: Massimiliano Pontil. Taught weekly tutorials and graded student homework.
  - **GI01/4C55 - Supervised Learning.** University College London, autumn 2005. Instructor: Massimiliano Pontil. Graded student homework.
  - **GI12/4C59 - Information Theory.** University College London, autumn 2004. Instructor: Massimiliano Pontil. Taught tutorials and graded student homework.
  - **Artificial Intelligence.** Massachusetts Institute of Technology, 1996. Taught recitations and graded student homework.

- Consulting**
- FasPark, 2009 – present. Technical consulting for Chicago startup on machine learning algorithms.

**Other  
Employment**

- Telecommunications sector (Athens, Greece, 1999-2003). Duties included design and implementation of software for network management, billing and customer records.
- Compulsory military service (Greece, 1998-1999). Worked on personnel management software.

**Awards**

- Searchspace prize for the MSc in Intelligent Systems and best MScIS project. Microsoft Research prize for postgraduate students in Computer Science and best MSc project, 2004.
- First and second prizes in Greek Mathematical Competitions and National Mathematical Olympiads, 1987-1991.
- Third prize in 31st International Mathematical Olympiad, 1990.
- Member of Eta Kappa Nu Honor Society, 1994.

**Other Activities**

- Treasurer, MIT Alumni Club of Greece, 2001-2003.
- Mathematical Summer School, Pleven, Bulgaria, 1987.

**Personal  
Information**

- Nationality: Greek

**Languages**

- Fluent in Greek and English (Cambridge Proficiency).