



Alfredo A. Kalaitzis

CONTACT INFORMATION	Sheffield Institute for Translational Neuroscience Department of Neuroscience, University of Sheffield 385a Glossop Road, Sheffield, S10 2HQ, United Kingdom	office: +44 114 222 2271 mobile: +44 796 194 6133 e-mail: A.Kalaitzis@sheffield.ac.uk staffwww.dcs.shef.ac.uk/people/A.Kalaitzis
RESEARCH INTERESTS	Dimensionality reduction, Gaussian processes, Bayesian inference, analysis of gene expression.	
EDUCATION	University of Sheffield , Sheffield, United Kingdom	
	<i>Ph.D. Computer Science</i>	Oct 2009 – present
	<ul style="list-style-type: none">• Expected graduation date: Sep 2012• Topic: <i>Inferring hidden complex causes of disease through probabilistic models</i>• Supervisor: Professor Neil D. Lawrence	
	University of Edinburgh , Edinburgh, United Kingdom	
	<i>M.Sc. Artificial Intelligence (Distinction)</i>	Sep 2008 – Aug 2009
	<ul style="list-style-type: none">• Thesis: <i>Image inpainting with Gaussian processes</i>• Supervisor: Professor Christopher C. K. Williams	
	Kavala Institute of Technology , Kavala, Greece	
	<i>B.Sc. Industrial Informatics (1st class honours)</i>	Sep 2002 – Apr 2007
	<ul style="list-style-type: none">• Thesis: <i>Recognition of linear data structures in many dimensions through the use of Hough-transform and an artificial neural network</i>• Supervisor: Professor Stylianos Papadakis	
HONOURS AND AWARDS	<p>3rd rank poster award in Computer Science Research Retreat, University of Sheffield, 2011</p> <p>EPSRC Doctoral Training Award, University of Sheffield, 2009-2012</p> <p>Highest GPA upon graduation, TEIK, Kavala, 2007</p> <p>IKY (Greek State Scholarships Foundation) scholarship for 3rd best GPA of 3rd year, Kavala, 2006</p> <p>IKY scholarship for 2nd best GPA of 2nd year, Kavala, 2005</p> <p>IKY award & scholarship for best GPA of 1st year, Kavala, 2004</p>	
REFEREED JOURNAL PUBLICATIONS	A.A. Kalaitzis and N.D. Lawrence: A simple approach to ranking differentially expressed gene expression time-courses through Gaussian process regression , <i>BMC Bioinformatics</i> 2011, 12:180.	
CONFERENCE PUBLICATIONS	A.A. Kalaitzis and N.D. Lawrence: Residual Component Analysis: Generalising PCA for more flexible inference in linear-Gaussian models , to appear in <i>ICML</i> 2012.	
TECHNICAL REPORTS	A.A. Kalaitzis and N.D. Lawrence: Residual components analysis , arXiv:1106.4333v1.	
TALKS & POSTERS	<p>Poster: <i>Residual Component Analysis for Estimating Sparse Inverse plus Low Rank Structures</i>. Poster presented at 22nd Annual Workshop on Mathematical and Statistical Aspects of Molecular Biology, Magnus-Haus, Berlin, Germany on 10/04/12.</p> <p><i>Generalising PCA for the analysis of heterogenous experimental data</i>. Presented at Sheffield Institute for Translational Neuroscience, Department of Neuroscience, University of Sheffield, U.K. on 26/03/12.</p> <p><i>Residual Component Analysis: Generalising PCA for more flexible inference in linear-Gaussian models</i>. Presented at Modelling Away Day, Peak District, U.K. on 23/03/12.</p> <p>Poster: <i>Residual Component Analysis</i>. Poster presented at MLSS11, Bordeaux, France on September 2011 and DCS Research Retreat, University of Sheffield, Sheffield, U.K. on May 2011.</p> <p><i>Ranking Differentially Expressed Gene Expression Time Courses through Gaussian Process Regression</i>. Presented at 5th International Workshop on Machine Learning in Systems Biology, Vienna, Austria on 21/07/11.</p> <p><i>Gaussian process regression for ranking differentially expressed gene expression time-series</i>. Presented at Sheffield Institute for Translational Neuroscience, Department of Neuroscience, University of Sheffield, U.K. on 11/04/11.</p>	

WORKSHOP & SEMINAR ATTENDANCES	<ul style="list-style-type: none"> • 22nd Annual Workshop on Mathematical and Statistical Aspects of Molecular Biology, Magnus-Haus, Berlin, Germany, 10 - 11 Mar 2012 • STOR-i Masterclass: <i>The Differential Geometry of Markov Chain Monte Carlo</i> by Professor Mark Girolami, Lancaster, UK, 17 January 2012 • Machine Learning Summer School, Bordeaux, France, 4 - 17 Sep 2011 • 5th Int. Workshop on Machine Learning in Systems Biology, Vienna, Austria, 20 - 21 Jul 2011 • Cosmology meets Machine Learning Workshop, London, UK, 3 - 6 May 2011 • 4th Int. Workshop on Machine Learning in Systems Biology, Edinburgh, UK, 15 - 16 Oct 2010 • EPSRC Symposium Workshop on Learning and inference in computational systems biology, Warwick, UK, 30 - 31 Mar 2010 • Statistical Inference in Computational Biology Summer School, Edinburgh, UK, 14 - 18 Jun 2010 														
REFeree SERVICE	<ul style="list-style-type: none"> • Journal of Machine Learning Research • IEEE/ACM Transactions on Computational Biology and Bioinformatics • IEEE Transactions on Pattern Analysis and Machine Intelligence • BMC Bioinformatics 														
TEACHING EXPERIENCE	<table border="0" style="width: 100%;"> <tr> <td style="width: 80%;">Teaching assistant (level)</td> <td style="text-align: right;">Oct 09 – present</td> </tr> <tr> <td>• Modelling & Simulation of Natural Systems (year 3 undergrad / graduate)</td> <td style="text-align: right;">11 – 12, sem 2</td> </tr> <tr> <td>• Adaptive Intelligence (year 3 undergrad / graduate)</td> <td style="text-align: right;">11 – 12, sem 2</td> </tr> <tr> <td>• Machine Learning and Adaptive Intelligence (graduate),</td> <td style="text-align: right;">11 – 12, sem 1</td> </tr> <tr> <td>• Adaptive Intelligence (year 3 undergrad / graduate)</td> <td style="text-align: right;">10 – 11, sem 2</td> </tr> <tr> <td>• Fundamentals of AI (year 1 undergrad),</td> <td style="text-align: right;">09 – 10, sem 2</td> </tr> <tr> <td>• Advanced Machine Learning (graduate),</td> <td style="text-align: right;">09 – 10, sem 1</td> </tr> </table>	Teaching assistant (level)	Oct 09 – present	• Modelling & Simulation of Natural Systems (year 3 undergrad / graduate)	11 – 12, sem 2	• Adaptive Intelligence (year 3 undergrad / graduate)	11 – 12, sem 2	• Machine Learning and Adaptive Intelligence (graduate),	11 – 12, sem 1	• Adaptive Intelligence (year 3 undergrad / graduate)	10 – 11, sem 2	• Fundamentals of AI (year 1 undergrad),	09 – 10, sem 2	• Advanced Machine Learning (graduate),	09 – 10, sem 1
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PROFESSIONAL EXPERIENCE	<p>Philips Healthcare, Böblingen, Germany</p> <p><i>R&D Software engineer / Intern</i> Mar 2006 – Aug 2006</p> <p>Network and Software Environment, Patient Monitoring: Design, implementation and documentation of functional enhancements to an existing tool designed for validation of records in the communication protocol among modules of a patient monitor. The specific tool allowed the selective rejection, filtering and handling of Ethernet packets. Due to its real-time requirement the solution was based upon RTAI, an open-source real-time extension for the LINUX kernel. An expansion to the formal language for filter specifications was created to allow simpler expressions of filtering rules. The implementation took place in a LINUX/RTAI environment with the use of C/C++ and Perl programming languages.</p>														
OPEN SOFTWARE	<p>GPTK: Gaussian Process Tool-Kit. R package in CRAN.</p> <p>GPREGGE: Gaussian Process Ranking and Estimation of Gene Expression time-series R package in Bioconductor 2.10. Matlab version: http://www.cs.man.ac.uk/~neill/gprege/</p>														
PROGRAMMING	Matlab, R, C/C++ (CUDA), Python, Perl, Java, Sage, L ^A T _E X, Sweave														
LANGUAGES	English, Greek, <small>Spanish, German</small>														
INTERESTS & ACTIVITIES	<p>τ Maths / Physics  Open Software</p> <p> Science Education & Dissemination</p>														
REFEREES	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Professor Neil D. Lawrence Professor, University of Sheffield Sheffield, United Kingdom phone: <i>available on request</i> e-mail: N.Lawrence@sheffield.ac.uk</p> </td> <td style="width: 50%; vertical-align: top;"> <p>Professor Magnus Rattray Professor, University of Sheffield Sheffield, United Kingdom phone: <i>available on request</i> e-mail: M.Rattray@sheffield.ac.uk</p> </td> </tr> </table> <p>Dr. Eleni Vasilaki Lecturer, University of Sheffield Sheffield, United Kingdom phone: <i>available on request</i> e-mail: E.Vasilaki@sheffield.ac.uk</p>	<p>Professor Neil D. Lawrence Professor, University of Sheffield Sheffield, United Kingdom phone: <i>available on request</i> e-mail: N.Lawrence@sheffield.ac.uk</p>	<p>Professor Magnus Rattray Professor, University of Sheffield Sheffield, United Kingdom phone: <i>available on request</i> e-mail: M.Rattray@sheffield.ac.uk</p>												
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