NICOS ANGELOPOULOS

PERSONAL INFORMATION

Born in Greece, 26 November ****

email	Name.Surname@gmail.com
website	http://stoics.org.uk/~nicos
phone	0776 582****
address	14M Genomics
citizenship	Greek/British

EDUCATION

1996-2001 City University, London

PhD in Computer Science

Pass · *Department of Computer Science* · School of Informatics
Thesis: *Probabilistic Finite Domains*
The thesis extended finite domains with probabilistic attributes. Crucially, the constraint store is utilised for enhancing logical inference with probabilistic reasoning.
Advisor: Prof. David Gilbert

1992-1993 Imperial College, London

MSc in Advanced Computer Science

Pass · *AI specialisation* · Department of Computing
Thesis: *A Constraint-Logic Based approach to scheduling*
This degree focussed heavily on declarative programming in AI.
Advisor: Prof. Robert Kowalski

1989-1992 University of Keele, UK

BSc in Compuer Science and Statistics

2.I · *Joint degree* · Departments of Computer Science and Maths
Final year project: *An Extensible System for Exploring Grammars*
Supervisor: Dr. Paul Singleton

HONORARY APPOINTMENT

11/15- Honorary research fellow— Imperial College

Imperial College London

Department of Surgery and Cancer

WORK EXPERIENCE

14M Genomics Hinxton Cambridgeshire

11/15-03/16 Senior member of staff— 14M Genomics*

Senior member of staff in machine learning for cancer diagnostic, decision support systems.
* Company ceased to trade due to denial of further funds from Syncona LLP

Sussex Univ.

7/15-10/15 Researcher in data analysis— Sussex Uni*

1/14-6/15 Researcher in data analysis— Imperial

Imperial College, London

SILAC-based elucidation of the role of kinases and phosphatases in cancer

- proteomic data analysis
- big cancer datasets
- analysis of in-vitro, model organism and in-vivo cancer datasets

PI: Georgios Giamas · 01273 873163 · g.giamas@imperial.ac.uk
* Moved with group from Imperial

7/13-12/13 **Researcher in mathematical toxicology — York**

University of York

Probabilistic graphical models in toxicology

- uncertainty modelling in toxicology
- Bayesian networks
- statistical machine learning

PI: James Cussens · 01904 328396 · james.cussens@york.ac.uk

10/10–6/13 **Researcher in computational biology— NKI**

Netherlands Cancer Institute

Statistical data analysis and development of in silico models for in vitro tumour metastasis

- modelling of focal adhesion dynamics
- Bayesian networks
- network gene association to phenotype
- networks biology

PI: Lodewyk Wessels · +31 20 5127987 · l.wessels@nki.nl

10/09–3/20 **Senior scientific officer — ICR, London**

Institute of Cancer Research

Statistical reasoning in computational cancer biology.

- integrative networks reconstruction
- pipelines for cancer datasets
- helped set up the lab
- grant applications

PI: Rune Linding

12/08–9/09 **Researcher in bioinformatics— IAH**

Institute for Animal Health

Statistical machine learning in systems Biology.

- co-expression patterns in microarrays
- multi platform multi expression co-analysis

PI: Mick Watson · 0131 651 9208 · mick.watson@roslin.ed.ac.uk

4/06–10/08 **Researcher in computational statistics— Edin.**

University of Edinburgh

BBSRC project: *Selective Chemical Intervention in Biological Systems*. Multidisciplinary project between structural biochemistry group and three other sites. In charge of statistical analysis, machine learning and data warehousing.

- analysis of mass-spectrometry data with R/Bioconductor
- classification trees for virtual screening on pyruvate kinase
- HMRF based clustering from microarray data

PI: Prof Malcolm Walkinshaw · 0131 6507056 · m.walkinshaw@ed.ac.uk

9/03–10/05 **Researcher in Bayesian statistics— York**

University of York

EPSRC/Maths for IT project: *Stochastic Logic Programs for MCMC*

- extended stochastic logic programs for realistic priors
- co-developed the theory and implemented the MCMCMS system
- realised programs that act as generative priors for graphical models

PI: James Cussens · 01904 328396 · james.cussens@york.ac.uk

11/02–6/03 **Researcher in machine learning— Imperial C.**

Imperial College, London

BBSRC: *Biochemical Networks using Probabilistic Knowledge discovery* &
EU pilot project: APrIL *Applications of Probabilistic Inductive Logic Programming*

- worked on probabilistic extensions to biochemical networks
- implemented an EM algorithm (FAM) for stochastic logic programs
- probabilistic aspects of logic learning
- applications in bioinformatics

PI: Stephen Muggleton · 020 7594 8307 · s.muggleton@imperial.ac.uk

11/00–10/01 **Researcher in stochastic reasoning — York**

University of York

EPSRC project: *Induction of Stochastic Logic Programs*

- stochastic logic programs for machine learning
- co-developed preliminary ideas on MCMC for stochastic logic programs.

PI: James Cussens · 01904 328396 · james.cussens@york.ac.uk

5/99–10/00 Researcher in deductive databases— ABERDEEN

University of Aberdeen

BBSRC/EPSRC project: *Development of a Mediator to Integrate Access to Databases in Molecular Biology*

- integrated access to remote biological databases
- demonstrated the integration of external data-sources to local views.

PI: Graham KEMP · +46 31 772 5411 · kemp@chalmers.se

FUNDING

Contributions

At Imperial College, ICR, NKI and York university I contributed text on statistical machine learning aspects of a variety of proposals in the area of computational biology.

British Cancer Campaign

Only author and co-investigator in submitted PhD funding proposal: *A knowledge-based exploration of proteomic datasets in cancer signalling*. (2015NovPhD599). Submitted in July 2015, principal investigator Dr G. Giamas (due to tenure restrictions).

MRC

Co-investigator on MRC grant proposal *Deciphering the kinome-related proteome* (MR/N009320/1). Submitted in December 2015. Principal investigator G. Giamas.

Royal Society

Short study visit grant to collaborate with Prof Mamitsuka's group in Kyoto University on *Application of MCMC methodologies to biological network discovery.* Three weeks in October 2006.

EPSRC

Acknowledged researcher in submitted EPSRC project proposal: *MCMC with Informative Structural Priors*, July 2005. (Rejected despite 2 very positive reviews.)

EPSRC

The 2003-5 project (*SLPs for MCMC*) had overall assessment of "*tending to outstanding*" and "*outstanding*" communication of research.

Royal Society

A 3-week study visit grant to collaborate with Prof Sato's group in Tokyo Institute of Technology on *MCMC for Prism programs*, Nov. 2004.

European Union

I was one of the two RAs working on the EU pilot project *Applications of Probabilistic Inductive Logic Programming*. This was assessed as successful and the EU funded a 3 year follow-on involving a number of European unis.

Royal Society

Short study visit grant to visit Prof Sato's group in Tokyo Inst. of Tech. on *EM algorithms for SLPs and Prism*. Two weeks in Oct. 2003.

EPSRC

Text contributor and named researcher in EPSRC project *Stochastic Logic Programs for MCMC*, 2003.

BBSRC

Contributor and named researcher for the funded BBSRC project *Studying Biochemical Networks using Probabilistic Knowledge discovery*, 2002.

OPEN SOURCE PROGRAMS

Website	Software can be found at http://stoics.org.uk/~nicos/sware. Notably, programs that manipulate and reason over Distributional Logic Programs and cross logical-statistical programming with Prolog and R.
Bims	Bayesian Inference of Model Structure - Markov chain sampling method for Bayesian machine learning of Distributional Logic Programming (DLP) defined models.
Real	A powerful low-level Prolog interface to the R statistical software. In collaboration with the group of Dr Vitor Costa Santos. A platform for integrative functional statistics in logic programming.
Pepl	An implementation of the failure adjusted maximisation (FAM) algorithm over Stochastic Logic Programs (SLPS).
ProSQLite	A popular low-level SWI-Prolog interface library to the SQLite database.
bio_db	High quality biological datasets as Prolog facts served via 3 different back ends.
Probabilistic meta-interpreters	For Probabilistic Concurrent Constraint Programming, (PCCP) and Probabilistic Finite Domains, (PFD).

PROFESSIONAL ACTIVITIES

Workshop initiator	PLP 2014, workshop on Probabilistic Logic Programming
Workshop organiser	PLP 2014, workshop on Probabilistic Logic Programming WCB 2014, (Workshop on Constraint Logic systems in Biology), CICLOPS 2012, (Colloquium on Implementation of Constraint and LOgic Programming Systems).
Committee member	IJCAI 2015, CICLOPS 2013, PLP 2015, WCB 2015, 2013, 2012, PROBIOMED 2011 (Probabilistic problem solving in biomedicine), MLG 2008, 2009 (Machine Learning with Graphs).
Special issue editor	PLP@IJAR, Probabilistic Logic Programming issue on International Journal of Approximate Reasoning (in preparation)
Reviewer	J. of Molecular Modelling (2010-2015), Bioinformatics (2012), WIREs Computational Statistics reviews (2012), Machine Learning J. 2009, ECML'04.
Invited speaker:	Probabilistic Logic Programming 2015

TEACHING

Courses

I have been involved in tutorial support, laboratory supervision and marking for courses in the areas of :

- declarative programming • logic • logic programming
- databases • AI • imperative programming, and
- Bioinformatics (Imperial College)
- supervised learning with R for biologists (NKI)

COMPUTER SKILLS

Programming

Prolog, R, SQL, C, Pascal, Miranda

Prolog Systems

SWI-Prolog, Yap, Sicstus

Operating Systems

Linux, Unix / X11, scripting

OTHER INFORMATION

Languages

Greek · mother tongue

English · fluent

Japanese · post-beginner

[Main coauthor and previous employer]
Dr. James Cussens — Senior Lecturer in Machine Learning
York Centre for Complex Systems Analysis — jc@cs.york.ac.uk
Department of Computer Science — http://www.cs.york.ac.uk/~jc
University of York, — ⁀44 1904 328396
York, YO10 5GE
UK

[Imperial college PI]
Dr. Georgios Giamas — Reader in Cell Signalling
School of Life Sciences — g.giamas@sussex.ac.uk
University of Sussex — http://www.sussex.ac.uk/lifesci/giamaslab/
Falmer, Brighton, BN1 9QG — ⁀44 1273 87 3136
UK

[Collaborator]
Dr. Herbert Wiklicky — Reader in Theoretical Computer Science
Department of Computing — herbert@doc.ic.ac.uk
South Kensington Campus — http://www.doc.ic.ac.uk/~herbert
Imperial College — ⁀44 20 7594 8206
London, SW7 2AZ
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[Mentor while at Imperial (2014-15)]
Prof. Justin Stebbing — Professor of Cancer Medicine and Oncology
Department of Surgery and Cancer — j.stebbing@imperial.ac.uk
Imperial College — http://www.imperial.ac.uk/people/j.stebbing
London, W12 0NN — ⁀44 208 7594 2793
UK

[PI in Aberdeen project]
Prof. Graham J.L. Kemp — Professor of Bioinformatics & Databases
Department of Computing Science — kemp@chalmers.se
Chalmers University of Technology — http://www.cs.chalmers.se/~kemp
SE-412 96 Göteborg — +46 31 772 5411
Sweden

Publications can be retrived from: http://stoics.org.uk/~nicos/pbs.
Impact factors are for 2013 as published on July 2014.

Journals, Chapters and International Conferences

[A1] Nicos Angelopoulos, Justin Stebbing, Yichen Xu, Georgios Giamas, and Hua Zhang. Functional proteomic landscape of tyrosine kinases in breast cancer. *Data in Brief*, 2016. Accepted for publication February 2016.

[A2] Joao Nunes, Hua Zhang, Nicos Angelopoulos, Jyoti Chhetri, Clodia Osipo, Justin Stebbing, and Georgios Giamas. ATG9A loss confers resistance to trastuzumab via c-Cbl mediated Her2 degradation. *Oncotarget*, January 2016. Accepted.
IF:6.63.

[A3] Nicos Angelopoulos. Probabilistic logic programming (PLP'14). *International Journal of Approximate Reasoning*, 67:59, December 2015. Editorial to Special Section.

[A4] Hua Zhang, Nicos Angelopoulos, Justin Stebbing, and Georgios Giamas. Proteomic profile of KSR1-regulated signaling in response to genotoxic agents in breast cancer. *Breast Cancer Research and Treatment*, 151(3):555–568, June 2015.
IF **4.20**.
Joint first author.

[A5] Justin Stebbing, Hua Zhang, Yichen Xu, Grothey Arnhild, Ajuh Paul, Nicos Angelopoulos, and Georgios Giamas. Reprogramming of the tyrosine kinase-regulated proteome in breast cancer by combined use of RNAi and SILAC quantitative proteomics. *Molecular & Cellular Proteomics*, 14(9):2479–92, Sep 2015.
IF: **6.80**.
Joint last author.

[A6] Nicos Angelopoulos and Georgios Giamas. A logical approach to working with biological databases. In *International Conference of Logic Programming*, Cork, Ireland, September 2015. Technical communication.

[A7] Yichen Xu, Hua Zhang, Van T Thuy Mai Nguyen, Nicos Angelopoulos, Joao Nunes, Alistair Reid, Laki Buluwela, Luca Magnani, Justin Stebbing, and Georgios Giamas. LMTK3 represses tumour suppressor-like genes through chromatin remodeling in breast cancer. *Cell Reports*, 12(5):837–849, 4 August 2015.
IF: **7.20**.

[A8] David MacIntyre, Manju Chandiramani, Yun S Lee, Lindsay Kindinger, Ann Smith, Nicos Angelopoulos, Benjamin C. Lehne, Shankari Arulkumaran, Richard Brown, Tiong Ghee Teoh, Elaine Holmes, Jeremy K. Nicholson, Julian Marchesi, and Phillip R. Bennett. The vaginal microbiome during pregnancy and the postpartum period in a European population. *Scientific Reports*, 5:Article number: 8988, 2015.
IF: **5.08**.

[A9] Emma Spanjaard, Ihor Smal, Nicos Angelopoulos, Ingrid Verlaan, Alexandre Matov, Erik Meijering, Lodewyk Wessels, Hans Bos, and Johan de Rooij. Quantitative

imaging of focal adhesion dynamics and their regulation by HGF and Rap1 signaling. *Experimental Cell Research*, 330(2):382–397, 2015.
IF: **3.37**.

[A10] Nicos Angelopoulos, Vítor Santos Costa, João Azevedo, Jan Wielemaker, Rui Camacho, and Lodewyk Wessels. Integrative functional statistics in logic programming. In *Proc. of Practical Aspects of Declarative Languages*, volume 7752 of *Lecture notes in Computer Science*, pages 190–205, Rome, Italy, Jan. 2013.

[A11] Sander Canisius, Nicos Angelopoulos, and Lodewyk Wessels. ProSQLite: Prolog file based databases via an SQLite interface. In *Proc. of Practical Aspects of Declarative Languages*, volume 7752 of *Lecture notes in Computer Science*, pages 222–227, Rome, Italy, Jan. 2013.
Joint first author.

[A12] Nicos Angelopoulos, Andreas Hadjiprocopis, and Malcolm D. Walkinshaw. Learning binding affinity from augmented high throuput screening data. In Huma Lodhi and Yoshihiro Yamanishi, editors, *Chemoinformatics and Advanced Machine Learning Perspectives*, chapter 11, pages 312–324. IGI-Global, 2010.

[A13] Holger Husi, Fiona McAllister, Nicos Angelopoulos, Victoria J. Butler, Kevin R. Bailey, Kirk Malone, Logan MacKay, Paul Taylor, Antony P. Page, Nicholas J. Turner, Perdita E. Barran, and Malcolm Walkinshaw. Selective chemical intervention in the proteome of caenorhabditis elegans. *J. of Proteome Research*, 9(11):6060–70, 11 2010.
IF: **5.0**.

[A14] Nicos Angelopoulos, Andreas Hadjiprocopis, and Malcolm D. Walkinshaw. Bayesian ligand discovery from high dimensional descriptor data. *ACS Journal of Chemical Information and Modeling*, 49(6):1547–1557, 6 2009.
IF: **4.0**.

[A15] Nicos Angelopoulos and James Cussens. Bayesian learning of Bayesian networks with informative priors. *Journal of Annals of Mathematics and Artificial Intelligence*, 54(1-3):53–98, November 2008.

[A16] Nicos Angelopoulos and James Cussens. Exploiting informative priors for Bayesian Classification and Regression Trees. In *Nineteenth International Joint Conference on Artificial Intelligence (IJCAI-05)*, pages 641–646, Edinburgh, UK, Aug. 2005. IJCAI.

[A17] Nicos Angelopoulos and James Cussens. Tempering for Bayesian C&RT. In *22nd International Conference on Machine Learning (ICML 2005)*, International Conference Proceedings, pages 17–24, Bonn, Germany, Aug. 2005. ACM.

[A18] Nicos Angelopoulos. Probabilistic space partitioning in constraint logic programming. In *Ninth Asian Computing Science Conference*, pages 48–62, Chiang Mai, Thailand, December 2004.

[A19] Nicos Angelopoulos. Extending the CLP engine for reasoning under uncertainty. In *14th International Symposium on Methodologies for Intelligent Systems*, pages 365–373, Maebashi, Japan, October 2003.

[A20] Nicos Angelopoulos and Stephen Muggleton. Machine learning metabolic pathway descriptions using a probabilistic relational representation. *Electronic Transactions in Artificial Intelligence*, 7(9):1–11, 2002.

[A21] Nicos Angelopoulos and James Cussens. Prolog issues and experimental results of an MCMC algorithm. In U. Geske, O. Bartenstein, M. Hannebauer, and O. Yoshie, editors, *Web-Knowledge Management and Decision Support - Selected Papers from the 14th International Conference on Applications of Prolog*, volume 2543 of *LNAI*, pages 191–202. Springer, 2002.

[A22] Graham J.L. Kemp, Nicos Angelopoulos, and Peter M.D. Gray. Architecture of a mediator for a bioinformatics database federation. *IEEE Transactions on Information Technology in Biomedicine*, 6(2):116–122, June 2002.
IF: **2.07**.

[A23] Nicos Angelopoulos and James Cussens. Markov chain Monte Carlo using tree-based priors on model structure. In Jack Breese and Daphne Koller, editors, *Uncertainty in Artificial Intelligence: Proceedings of the Seventeenth Conference (UAI-2001)*, pages 16–23, Seattle, USA, August 2001. Morgan Kaufmann.

[A24] Graham J. L. Kemp, Chris Robertson, Peter M. D. Gray, and Nicos Angelopoulos. CORBA and XML: Design choices for database federations. In Brian Lings and Keith Jeffery, editors, *Advances in Databases*, volume 1832 of *Lecture Notes in Computer Science*, pages 191–208. Springer Berlin/Heidelberg, 2000.

Minor Conferences and Refereed Workshops

[B25] Nicos Angelopoulos, Samer Abdallah, and Georgios Giamas. Advances in integrating statistical inference. In *Workshop on Probabilistic logic programming*, Cork, Ireland, 2015. To be also submitted to the associated IJAR special issue.

[B26] Joao Farinha Garcao Nunes, Hua Zhang, Justin Stebbing, Nicos Angelopoulos, and Georgios Giamas. SILAC-based analysis reveals a unique phosphoproteomic-signature of HER2-resistant breast cancer cells. *Anticancer Research*, 34(10):5900, Oct 2014.

[B27] Nicos Angelopoulos and Georgios Giamas. Prolog bioinformatic pipelines: a case study in gene dysregulation. In *10th Workshop on Constraint-Based Methods for Bioinformatics*, Lyon, France, September 2014.

[B28] Sander Canisius, Nicos Angelopoulos, and Lodewyk Wessels. Exploring file based databases via an SQLite interface. In *ICLP Workshop on Logic-based methods in Programming Environments (WLPE'12)*, pages 2–9, Budapest, Hungary, September 2012.

[B29] Jan Wielemaker and Nicos Angelopoulos. Syntactic integration of external languages in Prolog. In *ICLP Workshop on Logic-based methods in Programming Environments (WLPE'12)*, pages 40–50, Budapest, Hungary, September 2012.

[B30] Nicos Angelopoulos, Paul Shannon, and Lodewyk Wessels. Search and rescue: logic and visualisation of biochemical networks. In *Proceedings of the ICLP 2012*

workshop on Constraints in Bioinformatics (WCB'12), pages 1–6, Budapest, Hungary, September 2012.

[B31] Nicos Angelopoulos and Lodewyk Wessels. Effective priors over model structures applied to DNA binding assay data. In *Proceedings of the AIME'11 workshop on Probabilistic Bio-Medicine (ProBioMed'11)*, Bled, Slovenia, July 2011.

[B32] Nicos Angelopoulos and Paul Taylor. An extensible web interface for databases and its application to storing biochemical data. In *WLPE '10 workshop, part of ICLP 2010*, Edinburgh, Scotland, July 2010.

[B33] Nicos Angelopoulos. Distributional logic programming: a brief overview. In *NIPS'08 Workshop: Probabilistic Programming: Universal Languages, Systems and Applications*, pages 641–646, Whistler, CA, December 2008.

[B34] Nicos Angelopoulos and James Cussens. Exploiting independence for branch operations in Bayesian learning of C&RTs. In Luc De Raedt, Thomas Dietterich, Lise Getoor, and Stephen H. Muggleton, editors, *Probabilistic, Logical and Relational Learning - Towards a Synthesis*, number 05051 in Dagstuhl Seminar Proceedings, Dagstuhl, Germany, 2006. Internationales Begegnungs- und Forschungszentrum (IBFI), Schloss Dagstuhl, Germany.

[B35] Nicos Angelopoulos and James Cussens. Extended stochastic logic programs for informative priors over C&RTs. In Rui Camacho, Ross King, and Ashwin Srinivasan, editors, *Proceedings of the work-in-progress track of the Fourteenth International Conference on Inductive Logic Programming (ILP04)*, pages 7–11, Porto, Portugal, September 2004.

[B36] Nicos Angelopoulos and James Cussens. On the implementation of MCMC proposals over stochastic logic programs. In *Colloquium on Implementation of Constraint and LOgic Programming Systems. Satellite workshop to ICLP'04*, Saint-Malo, France, 2004.

[B37] Nicos Angelopoulos. Upsh: A Unix to Prolog Shell. In *Workshop on Logic Programming Environments. Satellite workshop to ICLP'04*, Saint-Malo, France, 2004.

[B38] Nicos Angelopoulos. clp(pfd(Y)): Constraints for probabilistic reasoning in logic programming. In *Ninth International Conference on Principles and Practice of Constraint Programming*, pages 784–788, Kinsale, Ireland, October 2003.

[B39] Nicos Angelopoulos and Stephen Muggleton. Machine learning metabolic pathway descriptions using a probabilistic relational representation. In *Machine Intelligence 19*, Wye, UK, September 18-20 2002.

[B40] Nicos Angelopoulos. Exporting Prolog source code. In *Workshop on Logic Programming Environments. Satellite workshop to ICLP'02*, pages 89–96, Copenhagen, Denmark, 2002.

[B41] Nicos Angelopoulos. Probabilistic finite domains: A brief overview. In *International Conference on Logic Programming*, page 475, Copenhagen, Denmark, 2002.

[B42] Nicos Angelopoulos and James Cussens. Prolog issues of an MCMC algorithm. In *Proceedings of the 14th International Conference of Applications of Prolog INAP2001*, pages 246–253, Tokyo, Japan, October 2001.