



## IOANNIS TSAMARDINOS

### CURRICULUM VITAE

**Current Affiliation:**

Associate Professor  
Department of Computer Science (CSD)  
University of Crete (UOC)

Founder and CEO  
Gnosis Data Analysis PC

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#### Personal

Born in Thessaloniki, Greece in 1973. Greek citizenship. Military obligations fulfilled Feb. 2006 – Aug. 2006 . Fluent in Greek and English.

#### Research Interests

Machine Learning, Bioinformatics, Artificial Intelligence, Causal Inference and Induction, Learning from Biomedical Data, Feature and Variable Selection for Classification, Applications of Machine Learning in Biomedical Informatics, Integrative Causal Analysis

#### Positions

Dates	Title	Institution
Oct. 2013 – Present	<i>Founder and CEO</i>	Gnosis Data Analysis PC
July 2013 – present	<i>Associate Professor</i>	CSD-UOC
Jan. 2011 –Dec. 2013	<i>Head of Bioinformatics Lab.</i>	ICS-FORTH <sup>1</sup>
Sep. 2006 –Jun 2013	<i>Assistant Professor</i>	CSD-UOC
Sep. 2006– Oct. 2015	<i>Affiliated Research Scientist</i>	ICS-FORTH
Feb. 2006–2013	<i>Adjunct Assistant Professor</i>	DBMI, Vanderbilt University

<sup>1</sup> Institute of Computer Science, Foundation for Research and Technology

Nov. 2001 – Feb. 2006	<i>Assistant Professor</i>	DBMI, Vanderbilt University
Jun. 1997 – Aug. 1997	<i>Intern</i>	Caelum Research NASA Ames Research Center, Moffett Field, CA

## Education

Dates-Degree	Institution	Dissertation Title
Aug. 2001, <b>Ph.D.</b>	Intelligent Systems Program, University of Pittsburgh	Constraint-based Temporal Reasoning Algorithms and Applications to Planning
Jul. 1998, <b>M.Sc.</b>	Intelligent Systems Program, University of Pittsburgh	Reformulating Temporal Plans for Efficient Execution
Jul. 1995, <b>B.Sc.</b>	Department of Computer Science, University of Crete	SM (Storage Manager): A Distributed System of Hierarchical Management of Relational Multimedia Databases, GPA 8.71/10.0, Graduated second in class

## Honors, Awards, and Distinctions

Dates	Award	Details
Nov. 2014	<b>Boeringer Ingelheim Cancer Research Award (Best Abstract / Poster of the Year) 2014, Norwegian Lung Cancer Group</b>	For the poster Robin Mjelle, Trygve Andreassen, Vincenzo Lagani, Konstantinos Kerkentzes, Ioannis Tsamardinos, Tone Bathen, Erik Larsson, Oluf Dimitri Røe, “HUNTING” early diagnostic biomarkers for lung cancer / mesothelioma : a pilot analysis from the Cancer-Biomarker-HUNT study”, <a href="http://www.nlcg.no/node/122">http://www.nlcg.no/node/122</a>
Nov. 2013	<b>ARISTEIA II Grant Recipient</b>	<b>Greek National Excellence Grant</b> for the proposal “Causal-Based Variable Selection for Omics Data”
Nov. 2013	<b>ERC Consolidator Grant Recipient</b>	<b>European Excellence Grant</b> for the proposal “Next Generation Causal Analysis: Inspired by the Induction of Biological Pathways from Cytometry Data”
Oct. 2012	<b>HSCBB 2012 Best Poster Award</b>	Triantafilou, Tsamardinos “Predicting associations from multiple “omics” data sets”, HSCBB 2012
Dec. 2011	<b>Board of Directors, ChaLearn</b>	ChaLearn (Challenges in Machine Learning) is a non-profit corporation organizing research challenges in the field <a href="http://www.chalearn.org/index.html">http://www.chalearn.org/index.html</a>

Jun. 2011	<b>Most Cited Papers of 2010</b>	For the paper <i>Peter Hunter, et. al., Phil. Trans. R. Soc. A 2010 368, 2595-2614</i>
Jun. 2011	<b>Editorial Board Member</b>	Frontiers in Bioinformatics and Computational Biology
Jun. 2008	<b>Best Performance</b> in one out of the four tasks of the competition	Team members: Laura E. Brown (unofficial submission due to perceived conflict of interest),
	First Causality Challenge Competition	<a href="http://www.causality.inf.ethz.ch/home.php">http://www.causality.inf.ethz.ch/home.php</a>
2005	<b>Science Direct Top 25 Hottest Articles</b> of the <i>International Journal of Medical Informatics</i>	For the paper <i>Alexander Statnikov, et. al., International Journal of Medical Informatics, 74(7-8):491-503, 2005</i>
Sep. 2005	<b>ISMB 2005 Best Poster Winner</b>	A. Statnikov, I. Tsamardinos, C. F. Aliferis, Intelligent Systems for Molecular Biology 2005. <a href="https://www.iscb.org/ismb2005/posters.html">https://www.iscb.org/ismb2005/posters.html</a>
2003-2007	<b>Editorial Board Member</b>	Journal of Artificial Intelligence Research
Sep. 2004	<b>Gold Medal,</b> Student Paper Competition as student's co-advisor	A. Statnikov, C. F. Aliferis, I. Tsamardinos, Proceedings of 11th World Congress in Medical Informatics (MEDINFO '04), 2004
Sep. 2000	<b>Andrew Mellon Fellow 2000-2001</b>	University of Pittsburgh
Apr. 2000	<b>Outstanding Student Paper Award</b>	I. Tsamardinos, M. E. Pollack, J. F. Horty, Proceedings of the 5th International Conference on AI Planning and Scheduling (AIPS 2000), April, 2000
Sep. 1999	<b>Andrew Mellon Fellow 1999-2000</b>	University of Pittsburgh
Jul. 1999	<b>NASA Group Achievement Award</b>	NASA Ames, as a member of the Remote Agent group
Jul. 1995	<b>Graduated 2<sup>nd</sup> in class</b>	CSD-UOC
Jul. 1994	Undergraduate Scholar Fellowship for Best Students	Ranked 5 <sup>th</sup> for year 1993-1994, CSD-UOC
Jul. 1993	Undergraduate Scholar Fellowship for Best Students	Ranked 2 <sup>th</sup> for year 1993-1994, CSD-UOC
Jul. 1992	Undergraduate Scholar Fellowship for Best Students	Ranked 2 <sup>th</sup> for year 1992-1993, CSD-UOC

## Teaching

Dates	Title	Institution
2011- present	HY119, Linear Algebra	CSD, University of Crete

2006 - present	HY577, Machine Learning	CSD, University of Crete
2008 - present	HY482, Algorithms in Bioinformatics	CSD, University of Crete
2008 - present	HY387, Intr. to Artificial Intelligence	CSD, University of Crete
2006, 2007	HY150, Programming	CSD, University of Crete
2003, 2004	DBMI 330, 330a, Biomedical Artificial Intelligence (and lab)	DBMI, Vanderbilt University

### Student Supervision

Degree	Name	Institution
Ph.D. ongoing	Giorgos Borboudakis	CSD, University of Crete
Ph.D. ongoing	Sofia Triantafyllou	CSD, University of Crete
Ph.D. - 2010	Laura E. Brown	DBMI, Vanderbilt University
Masters – ongoing	Anna Roubelaki	CSD, University of Crete
Masters – ongoing	Panayiotis Tzirakis	CSD, University of Crete
Masters – ongoing	Konstantinos Kerkentzes	CSD, University of Crete
Masters – 2013	Giorgos Borboudakis	CSD, University of Crete
Masters – 2011	Angelos Armen	CSD, University of Crete
Masters - 2006	Laura E. Brown	DBMI, Vanderbilt University
Masters - 2006	Lawrence Fu	DBMI, Vanderbilt University

### Committee Member

Degree	Name	Institution
Ph.D. – ongoing	Nikos Kyriazis	CSD, University of Crete
Ph.D. – ongoing	Nestoras Karathanasis	Biology Dept. Un. of Crete
Ph.D. – ongoing	Georgia Orphanoudaki	Biology Dept. Un. of Crete
Ph.D. – 2013	Amanullah Yasin	Universite de Nantes
Ph.D. – 2013	Grace Huang	University of Pittsburgh
Ph.D. – 2013	Antti Hyttinen	Comp. Sci. Dept, Un. Helsinki
Ph.D. – 2011	Maria Markaki	CSD, University of Crete
Ph.D. – 2011	Giorgos Tzanis	Dept. of Informatics, AUTH
Ph.D. - 2009	Vassilis Tsiaras	CSD, University of Crete
Ph.D. – 2008	Alexander Statnikov	DBMI, Vanderbilt University
Ph.D. - 2008	Yindalon Aphinyanaphongs	DBMI, Vanderbilt University
Masters – 2012	Sofia Kleisarhaki	CSD, University of Crete
Masters – 2012	Vasilis Efthymiou	CSD, University of Crete
Masters – 2011	Chrysi Filipaki	CSD, University of Crete
Masters – 2011	Giorgos Hatzivasilis	CSD, University of Crete
Masters – 2009	Dimitrios Velegarakis	CSD, University of Crete
Masters – 2009	Aikaterini Ghirzou	CSD, University of Crete
Masters – 2009	Maria Kalaitzaki	CSD, University of Crete
Masters – 2009	Michalis Moudatsos	CSD, University of Crete
Masters – 2008	Evaggelia Kassapaki	CSD, University of Crete

Masters – 2008	Yiannis Lilis	CSD, University of Crete
Masters – 2005	Yindalon Aphinyanaphongs	DBMI, Vanderbilt University
Masters – 2005	Nafeh Fananapazir	DBMI, Vanderbilt University
Masters – 2005	Alexander Statnikov	DBMI, Vanderbilt University

### Invited Talks

Dates	Place	Title
Jan 2015	National Documentation Center, RECODE conference on Open Access Data	Open BioMedical Data for Integrative Analysis ( <a href="http://openaccess.gr/conferences/conference2015/">http://openaccess.gr/conferences/conference2015/</a> )
Dec. 2014	Session: Bayesian Networks in Official Statistics, ERCIM WG on Computational and Methodological Statistics, University of Pisa, Italy	Advances in integrative causal analysis and connections to statistical matching
Oct. 2014	Max Planck Institute for Intelligent Systems	Advances in Integrative Causal Analysis and Applications to Mass Cytometry Data
May 2014	Intelligent Systems Laboratory, University of Amsterdam	Advances in Integrative Causal Analysis and Applications to Mass Cytometry Data
Apr. 2014	Workshop Bioinformatics in Oncology, Thessaloniki	Discovering Molecular and Clinical Signatures of Cancer
Oct 2013	Workshop: Case Studies of Causal Discovery with Model Search, Carnegie Mellon University, Pittsburgh, PA, USA	Causal Discovery from Mass Cytometry Data
May 2013	University of Helsinki	Causally Inspired Approaches to Variable Selection, Molecular Signature Identification, and Integrative Analysis of Heterogeneous Datasets
June 2011	Norwegian University of Science and Technology, Trondheim, Norway	Advances in Causal-Based Analysis Methods for Biomedical Data
May 2011	Department of Philosophy at Carnegie Mellon University, University of Pittsburgh, University of Michigan, University of Massachusetts at Amherst New York University	Towards Integrative Causal Analysis of Heterogeneous Datasets and Prior Knowledge
Sep. 2007	Consiglio Nazionale delle Ricer-	Advances in Machine Learning Feature Se-

	che, Pisa, Italy	lection and Causal Discovery
Jun. 2004	University of Macedonia, Greece	Advances in Bayesian Network Learning, Causal Discovery, and Variable Selection in Massive Datasets with Applications in Biomedicine
Jun. 2004	Institute of Computer Science, Foundation for Research and Technology, Hellas	Advances in Bayesian Network Learning, Causal Discovery, and Variable Selection in Massive Datasets with Applications in Biomedicine
Sep. 2003	As part of the Center for Computational Biology Seminar Series Center for Computational Biology, University of Colorado	Advances in Bayesian Network Learning, Causal Discovery, and Variable Selection in Massive Datasets with Applications in Biomedicine
Jun. 2003	Plan Execution Workshop, International Conference in Automated Planning and Scheduling (ICAPS), 2003	Panel Member, discussion on Planning and Execution issues
Sep. 2000	Instituto di Psicologia, Consiglio Nazionale delle Ricerche (IP-CNR), Rome	Reformulating Temporal Plans for Efficient Execution
Sep. 2000	Instituto di Psicologia, Consiglio Nazionale delle Ricerche (IP-CNR), Rome	Algorithms and Applications of New Constrained-based Temporal Reasoning Frameworks
Feb. 2000	Symposium on Intelligent Agents in Software Engineering for Planning, Ghent, Belgium	On Plan Management Issues

### Conference Organization

Dates	Role	Title
2012	Local Organizing Committee	7th Conference of the Hellenic Society for Computational Biology & Bioinformatics - HSCBB12
2011	Area Chair	European Conference in Machine Learning (ECML – 2011)
2011	Senior PC member	22nd International Joint Conference in Artificial Intelligence (IJCAI 2011)
2007	Co-organizer	Hellenic Bioinformatics & Medical Informatics Meeting

### Reviewer for Scientific Journals

Dates	Field	Title
2012	Statistics	Annals of Statistics
	Pattern Recognition	Transactions on Pattern Analysis and Machine Intelligence
	Computer Science	International Journal of Approximate Reasoning
	Machine Learning	Journal of Machine Learning Research

2011	Artificial Intelligence	Applied Artificial Intelligence, Special Issue on Event Recognition
	Artificial Intelligence	Transactions on Knowledge and Data Engineering
	Machine Learning	Journal of Machine Learning Research
	Bioinformatics	BMC Bioinformatics
2010	Artificial Intelligence	Knowledge and Information Systems
	Machine Learning	Journal of Machine Learning Research
	Bioinformatics	Bioinformatics
2009	Bioinformatics	BMC Bioinformatics
	Computer Science	International Journal of Approximate Reasoning
	Machine Learning	Journal of Machine Learning Research
	Pattern Recognition	IEEE Trans. on Pattern Analysis and Machine Intelligence
	Artificial Intelligence	Transactions on Knowledge and Data Engineering
2008	Machine Learning	Journal of Machine Learning Research
2007	Machine Learning	Machine Learning Journal
	Bioinformatics	Bioinformatics
	Bioinformatics	BMC Bioinformatics
	Machine Learning	Journal of Machine Learning Research
2006	Machine Learning	Journal of Machine Learning Research
	Artificial Intelligence	Journal of Artificial Intelligence Research
2005	Artificial Intelligence	Decision Support Systems Journal
	Artificial Intelligence	Artificial Intelligence Journal
2004	Artificial Intelligence	International Journal of Pattern Recognition and A.I
	Artificial Intelligence	AI Communications Journal
2003	Artificial Intelligence	Journal of Artificial Intelligence Research
2002	Artificial Intelligence	Journal of Artificial Intelligence Research

### Reviewer for Conferences

2010	Medical Informatics	Virtual Physiological Human Conference
2009	Artificial Intelligence	International Conference on Intelligent Systems Design and Applications
2005	Bioinformatics	Pacific Symposium in Bioinformatics (PSB)
	Medical Informatics	11 <sup>th</sup> World Congress on Medical Informatics, MEDINFO
2003	Medical Informatics	American Medical Informatics Associations, AMIA
2002	Artificial Intelligence	First Eur. Starting AI Researcher Symposium, STAIRS
	Artificial Intelligence	Second Hellenic Conference on AI, SETN
2001	Planning	European Conference in Planning, ECP
	Artificial Intelligence	American Association for Artificial Intelligence, AAAI

### Program Committee Member

2012	Artificial Intelligence	European Conference in Artificial Intelligence (ECAI 2012)
	Artificial Intelligence	7 <sup>th</sup> Hellenic Conf. on Artificial Intelligence (SETN 2012)
2011	Artificial Intelligence	Artificial Intelligence and Soft Computing (ASC 2011)
	Artificial Intelligence	Uncertainty in Artificial Intelligence (UAI 2012)
2010	Artificial Intelligence	6th Conference of the Hellenic AI Society (SETN-2010)
	Machine Learning	Int. Work. on Feature Selection in Data Mining (FSDM)
	Machine Learning	20th Int. Conference on Artificial Neural Networks
	Bioinformatics	10th IEEE International Conference on Information Technology and Applications in Biomedicine (ITAB)
	Machine Learning	Uncertainty in Artificial Intelligence (UAI 2010)

	Biomedical Inf.	12th Mediterranean Conference on Medical and Biological Engineering and Computing – MEDICON
2009	Medical Informatics	International Conference on Health Informatics (HEALTHINF)
	Planning	International Conference on Automated Planning and Scheduling (ICAPS)
2008	Bioinformatics	8 <sup>th</sup> IEEE International Conference on Bioinformatics and Bioengineering (BIBE)
2008	Machine Learning	Workshop on Feature Selection in Data Mining (FSDM)
	Artificial Intelligence	20th International Conference on Tools with Artificial Intelligence, ICTAI
2006	Artificial Intelligence	5th Hellenic Conference on Artificial Intelligence, SETN
	Artificial Intelligence	FLAIRS
2004	Artificial Intelligence	American Association for Artificial Intelligence (AAAI)
	Artificial Intelligence	Third Hellenic Conference on AI, SETN

### Academic Service and Professional Activities

Date	Type	Institution
2011-2012	Graduate Studies Committee Member	CSD, University of Crete
2012	Faculty Electoral Committee	CSD, University of Crete
2011- present	<b>Member of the Brain and Mind Graduate Program</b>	Interdisciplinary, University of Crete
2011-2012	Coordinator Graduate Admissions Committee	CSD, University of Crete
2010	Faculty recommendation committee	Medical School, University of Patras
2010	Faculty Electoral Committee	Biology Dept., University of Crete
2009	Faculty recommendation committee	Dept. of Agricultural Biotechnology, Agricultural University of Athens
2008-09	Graduate Studies Committee Member	CSD, University of Crete
2007-08	Undergraduate Studies Committee Member	CSD, University of Crete
2006-2007	Graduate Admissions Committee Member	CSD, University of Crete
2001-2006	Graduate Admissions Committee Member	DBMI, Vanderbilt University

### Reviewed Scientific Publications

Citation Type

**Legend: Type : C – Conference, J – Journal, BC – Book Chapter**

#### 2015

[1] Christina Papagiannopoulou, Grigorios Tsoumakas, Ioannis Tsamardinos, “**Discovering and Exploiting Entailment Relationships in Multi-Label Learning**”, ACM SIGKDD Conference on Knowledge Discovery and Data Mining 2015 (KDD)

C



- [2] Giorgos Borboudakis, Ioannis Tsamardinos, “**Bayesian Network Learning with Discrete Case-Control Data**”, *Uncertainty in Artificial Intelligence (UAI)*, 2015 C
- [3] Nestoras Karathanasis, Ioannis Tsamardinos, Panayiota Poirazi, “**MiRduplexSVM: A High-Performing miRNA-Duplex Prediction and Evaluation Methodology**”, *PLoS ONE* 10(5): e0126151. doi:10.1371/journal.pone.0126151 J
- [4] Vincenzo Lagani, Franco Chiarugi, Dimitris Manousos, Vivek Verma, Jo Fursse, Kostas Marias, Ioannis Tsamardinos, “**Realization of a service for the long-term risk assessment of diabetes-related complications**”, *Journal of Diabetes and its Complications* 29(5), p. 691-698, 2015 J
- [5] Vincenzo Lagani, Sofia Triantafyllou, Gordon Ball, Jesper Tegner, Ioannis Tsamardinos, “**Probabilistic Computational Causal Discovery for Systems Biology**”, in *Uncertainty in Biology, A computational Modeling Approach*, Springer 2015, (Eds) Liesbet Geris, David Gomez-Cabrero BC
- [6] Vincenzo Lagani, Franco Chiarugi, Shona Thomson, Jo Fursse, Edin Lakasing, Russell W. Jones, Ioannis Tsamardinos, “**Development and validation of risk assessment models for diabetes-related complications based on the DCCT/EDIC data**”, *Journal of Diabetes and Its Complications* 2015 May-Jun;29(4):479-87. doi: 10.1016/j.jdiacomp.2015.03.001 J
- [7] Sofia Triantafyllou, Ioannis Tsamardinos, “**Constraint-based Causal Discovery from Multiple Interventions over Overlapping Variable Sets**”, (to appear) *Journal of Machine Learning Research* J
- [8] Ioannis Tsamardinos, Amin Rakhshani, Vincenzo Lagani, “**Performance-Estimation Properties of Cross-Validation-Based Protocols with Simultaneous Hyper-Parameter Optimization**”, *International Journal on Artificial Intelligence Tools* 24(5), 2015, DOI: 10.1142/S0218213015400230 J
- [9] Grace T. Huang, Ioannis Tsamardinos, Vineet Raghunathan, Naftali Kaminski, Panayiotis V. Benos, “**T-Recs: Stable selection of Dynamically Formed Groups of Features with Application to Prediction of Clinical Outcomes**”, *Pacific Symposium on Biocomputing (PSB)* 2015 C
- 2014**
- [10] Kerkentzes Konstantinos, Lagani Vincenzo, Tsamardinos Ioannis, Vyberg Mogens, Oluf D. Røe, “**Hidden treasures in “ancient” microarrays: Gene expression portrays biology and potential resistance pathways of major lung cancer subtypes and normal tissue**”, *Frontiers in Oncology* 4, 2014, doi: 10.3389/fonc.2014.00251 J
- [11] Sofia Triantafyllou, Ioannis Tsamardinos, and Anna Roumpelaki, “**Learning Neighborhoods of High Confidence in Constraint-Based Causal Discovery**”, the *Seventh European Workshop on Probabilistic Graphical Models (PGM)*, 2014 C
- [12] Nestoras Karathanasis; Ioannis Tsamardinos; Panayiota Poirazi, “**Don't use a cannon to kill the ... miRNA mosquito**”, *Bioinformatics* 2014; doi: 10.1093/bioinformatics/btu100 J
- [13] Ioannis Tsamardinos, Amin Rakhshani, Vincenzo Lagani, “**Performance-Estimation Properties of Cross-Validation-Based Protocols with Simultaneous Hyper-Parameter** C

**Optimization**”, 8<sup>th</sup> Hellenic Conference on Artificial Intelligence (SETN) 2014

### 2013

[14] Ismene Karakasilioti, Irene Kamileri, Georgia Chatzinikolaou, Theodoros Kosteas, Eleni Vergadi, Andria Rasile Robinson, Ioannis Tsamardinos, Tania A. Rozgaja, Sandra Siakouli, Christos Tsatsanis, Laura J. Niedernhofer, and George A. Garinis, “**DNA Damage Triggers a Chronic Autoinflammatory Response, Leading to Fat Depletion in NER Progeria**” *Cell Metabolism* 18(3), Sep. 2013, 403-415

J

[15] Nestoras Karathanasis, Angelos Armen, Ioannis Tsamardinos and Panayiota Poirazi, “**A bioinformatics approach for investigating the determinants of Drosha processing**”, 13th IEEE International Conference on Bioinformatics and Bioengineering (IEEE BIBE 2013)

C

[16] Giorgos Borboudakis, Ioannis Tsamardinos, “**Scoring and Searching over Bayesian Networks with Informative, Causal and Associative Priors**”, Uncertainty in Artificial Intelligence (UAI) 2013

C

[17] Vincenzo Lagani, George Kortas, Ioannis Tsamardinos, “**Biomarker signature identification in “omics” data with multi-class outcome**”, *Computational and Structural Biotechnology Journal* 6, jun. 2013

J

[18] Hunter P, Chapman T, Coveney PV, de Bono B, Diaz V, Fenner J, Frangi AF, Harris P, Hose R, Kohl P, Lawford P, McCormack K, Mendes M, Omholt S, Quarteroni A, Shublaq N, Ska°r J, Stroetmann K, Tegner J, Thomas SR, Tollis I, Tsamardinos I, van Beek JHGM, Viceconti M. 2013 “**A vision and strategy for the VPH: 2012 update**”. *Interface Focus* 2013 3, 20130004. <http://dx.doi.org/10.1098/rsfs.2013.0004>

J

[19] Giorgio L Papadopoulos, Elena Karkoulia, Ioannis Tsamardinos, Catherine Porcher, Jiannis Ragoussis, Jorg Bungert and John Strouboulis, “**GATA-1 genome-wide occupancy associates with distinct epigenetic profiles in mouse fetal liver erythropoiesis**”, *Nucleic Acids Research Journal* 41(9) 2013 doi: 10.1093/nar/gkt167

J

[20] Sophia Kleisarchaki, Dimitris Kotzinos, Ioannis Tsamardinos, and Vassilis Christophides, “**A Methodological Framework for Statistical Analysis of Social Text Stream**”, International Workshop on Information Search, Integration and Personalization (ISIP 2012), 2013

C

[21] Vincenzo Lagani, Lefteris Koumakis, Franco Chiarugi, Edin Lakasing, Ioannis Tsamardinos, “**A systematic review of predictive risk models for diabetes complications based on large scale clinical studies**”, *Journal of Diabetes and Its Complications*, 2013 <http://dx.doi.org/10.1016/j.jdiacomp.2012.11.003>

J

### 2012

[22] Nestoras Karathanasis, Angelos Armen, Ioannis Tsamardinos and Panayiota Poirazi, “**SVM-Based miRNA:miRNA\* Duplex Prediction**”, *IEEE 12<sup>th</sup> International Conference on Bioinformatics and BioEngineering* (BIBE 2012)

C

[23] Giorgos Borboudakis, Sofia Triantafillou, Ioannis Tsamardinos, “**Tools and Algorithms for Causally Interpreting Directed Edges in Maximal Ancestral Graphs**”, *The Sixth European Workshop on Probabilistic Graphical Models*, (PGM) 2012

C

[24] Giorgos Borboudakis, Ioannis Tsamardinos, “**Incorporating Causal Prior Knowledge as Path-Constraints in Bayesian Networks and Maximal Ancestral Graphs**”, *International Conference in Machine Learning (ICML)*, 2012

[25] Ioannis Tsamardinos, Giorgos Borboudakis, Eleni G. Christodoulou, Oluf D. Røe, “**Chemosensitivity Prediction of Tumours Based on Expression, miRNA, and Proteomics Data**”, *International Journal of Systems Biology and Biomedical Technologies (IJSBBT)*, Volume 1, Issue, 2012

[26] Vincenzo Lagani, Ioannis Tsamardinos, Sofia Triantafillou, “**Learning from a mixture of experimental data: a constrained-based approach**”, 7<sup>th</sup> Hellenic Conference on Artificial Intelligence (SETN), 2012

[27] Ioannis Tsamardinos, Sofia Triantafillou, Vincenzo Lagani, “**Towards Integrative Causal Analysis of Heterogeneous Datasets and Studies**”, *Journal of Machine Learning Research* 13(Apr):1097–1157, 2012

[28] Laura E. Brown, Ioannis Tsamardinos, Douglas P. Hardin, “**To Feature Space and Back: Identifying Top-Weighted Features in Polynomial Support Vector Machines Models**”, *Intelligent Data Analysis*, 16(4), 2012

## 2011

[29] C. Filipaki, G. Antoniou, I. Tsamardinos, “**Using Constraint Optimization for Conflict Resolution and Detail Control in Activity Recognition**”, International Joint Conference on Ambient Intelligence (AMI 2011)

[30] L. Koumakis, F. Chiarugi, V. Lagani, I. Tsamardinos, “**Risk assessment models for diabetes complications: a survey of available on line tools**”, 2nd International ICST Conference on Wireless Mobile Communication and Healthcare (MobiHealth 2011), Kos Island, Greece, 5-7 October 2011

[31] Vincenzo Lagani, Ioannis Tsamardinos, Magda Grammatikou, George Garinis, “**A Genome-Wide Study of the Effect of Aging on Level-2 Gene-Ontology Categories in Mice Using Mixed Models**”, ECML/PKDD 2011, Workshop on “Data Mining in Genomics and Proteomics”

[32] Eleni G. Christodoulou, Oluf Dimitri Røe, Amos Folarin, Ioannis Tsamardinos, “**Information-Preserving Techniques Improve Chemosensitivity Prediction of Tumours Based on Expression Profiles**”, 12<sup>th</sup> Engineering Applications of Neural Networks (EANN) / 7<sup>th</sup> Artificial Intelligence Applications and Innovations (AIAI) joint conferences, Workshop on Computational Intelligence Applications in Bioinformatics (CIAB 2011)

[33] Giorgos Borboudakis, Sofia Triantafillou, Vincenzo Lagani, Ioannis Tsamardinos, “**A constraint-based approach to incorporate prior knowledge in causal models**”, European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning (ESANN 2011)

[34] Angelos P. Armen and Ioannis Tsamardinos, “**A Unified Framework for Estimation and Control of the False Discovery Rate in Bayesian Network Skeleton Identification**”, European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learn-

ing (ESANN 2011)

## 2010

[35] Katerina Gkirtzou, Ioannis Tsamardinos, Panagiotis Tsakalides, Panayiota Poirazi, “**MatureBayes: A probabilistic algorithm for identifying the mature miRNA within novel precursors**”, *PLoS ONE* 5(8): e11843. doi:10.1371/journal.pone.0011843

J

[36] Ioannis Tsamardinos, Giorgos Borboudakis, “**Permutation Testing Improves Bayesian Network Learning**”, European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD 2010)

C

[37] Vincenzo Lagani, Ioannis Tsamardinos, “**Structure-Based Variable Selection for Survival Data**”, *Bioinformatics* 2010 26(15):1887-1894; doi:10.1093/bioinformatics/btq261

J

[38] Peter Hunter, Peter V. Coveney, Bernard de Bono, Vanessa Diaz, John Fenner, Alejandro F. Frangi, Peter Harris, Rod Hose, Peter Kohl, Pat Lawford, Keith McCormack, Miriam Mendes, Stig Omholt, Alfio Quarteroni, John Skår, Jesper Tegner, S. Randall Thomas, Ioannis Tollis, Ioannis Tsamardinos, Johannes H. G. M. van Beek and Marco Viceconti, “**A vision and strategy for the virtual physiological human in 2010 and beyond**”, *Phil. Trans. R. Soc. A* 2010 368, 2595-2614

J

[39] Franco Chiarugi, Dimitra Emmanouilidou, Ioannis Tsamardinos, “**Morphological classification of heartbeats to dominant and non-dominant in ECG signals**”, *Physiological Measurement* 31 (2010) 611-631

J

[40] Sofia Triantafillou, Ioannis Tsamardinos, Ioannis Tollis, “**Learning Causal Structure from Overlapping Variable Sets**”, in Y.W. Teh and M. Titterton (Eds.), Proceedings of The Thirteenth International Conference on Artificial Intelligence and Statistics (AISTATS) 2010, JMLR: W&CP 9, pp 860-867, 2010, Chia Laguna, Sardinia, Italy, May 13-15, 2010

C

[41] Constantin F. Aliferis, Alexander Statnikov, Ioannis Tsamardinos, Subramani Mani, Xenofon D. Koutsoukos, “**Local Causal and Markov Blanket Induction for Causal Discovery and Feature Selection for Classification. Part I: Algorithms and Empirical Evaluation**”, *Journal of Machine Learning Research, Special Topic on Causality* 11:171–234, 2010

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## Tutorials

- [1] Ioannis Tsamardinos, Sofia Triantafyllou, Vincenzo Lagani, “**Introduction to causal discovery: A Bayesian Networks approach**”, High-Throughput Omics & Data Integration Workshop 2013 (COST Workshops)
- [2] Ioannis Tsamardinos, Sofia Triantafyllou, “**Introduction to Causal Discovery: A Bayesian Network Approach**”, *European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD)*, 2011
- [3] Ioannis Tsamardinos, Sofia Triantafyllou, “**Introduction to Causal Discovery: A Bayesian Network Approach**”, *The Fourteenth IASTED International Conference on Artificial Intelligence and Soft Computing (ASC 2011)*
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- [6] Nicola Muscettola, Ioannis Tsamardinos, Luke Hunsberger, “**Temporal Reasoning for Planning, Scheduling and Execution in Autonomous Agents**”, in the Fourth International Joint Conference Autonomous Agents and Multiagent Systems (AAMAS), 2005
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## System Demos

- [1] Statnikov A, Tsamardinos I, Aliferis CF. “**Using the GEMS System for Supervised Analysis of Cancer Microarray Gene Expression Data**”. AMIA Annual Symposium, 2005
- [2] Alexander Statnikov, Ioannis Tsamardinos, Constantin F. Aliferis, “**Using GEMS for Cancer Diagnosis and Biomarker Discovery from Microarray Gene Expression Data**”, to the Proceedings of the Twentieth National Conference on Artificial Intelligence (AAAI), 2005
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## Posters

Giorgos Borboudakis, Ioannis Tsamardinos, “**Incorporating Causal Prior Knowledge in Causal Models**”, 7<sup>th</sup> Conference of the Hellenic Society for Computational Biology & Bioinformatics - HSCBB12

Konstantinos Kerkentzes and Ioannis Tsamardinos, “**A feature selection algorithm for identifying high-order interactions in high-dimensional biological data**”, 7<sup>th</sup> Conference of the Hellenic So-

ciety for Computational Biology & Bioinformatics - HSCBB12

Vincenzo Lagani, George Kortas, Ioannis Tsamardinos, “**Biomarker signature identification in “omics” data with multi-class outcome**”, 7<sup>th</sup> Conference of the Hellenic Society for Computational Biology & Bioinformatics - HSCBB12

Ioannis Tsamardinos, Vincenzo Lagani, Dimitris Pappas, “**Discovering multiple, equivalent biomarker signatures**”, 7<sup>th</sup> Conference of the Hellenic Society for Computational Biology & Bioinformatics - HSCBB12

Sofia Triantafyllou, Ioannis Tsamardinos, “**Predicting associations from multiple “omics” data sets using causal discovery**”, 7<sup>th</sup> Conference of the Hellenic Society for Computational Biology & Bioinformatics - HSCBB12 (**Winner of Best Poster Award**)

Sophia Kleisarchaki, Dimitris Kotzinos, Ioannis Tsamardinos, Vassilis Christophides, “**Towards a Realistic Social Text Stream Workbench**”, Intersocial Workshop on Online Social Networks (IWOSN) 2012

Chatzi, K., Orfanoudaki, G., Koukaki, M., Gouridis, G, Tsamardinos I, Karamanou S. and Economou A., “**Optimal matching between signal peptides and mature domains determines protein secretion efficiency**”, *1st International Proteomics Conference on Crete (IPCC01)*, Heraklion 07-09 October 2010

Orfanoudaki, G., Chatzi, K., Tsamardinos, I and Economou A., “**Proteome-wide search for secretion signals in Escherichia coli**”, *1st International Proteomics Conference on Crete (IPCC01)*, Heraklion 07-09 October 2010

Ioannis Tsamardinos, “**Integrative Causal Analysis – The Theory of Statistical Model Integration and Data Co-Analysis**”, First VPH Conference (VPH 2010)

Aliferis CF, Statnikov A, Tsamardinos I, Kokkotou E, Massion PP. “**Application and Comparative Evaluation of Causal and Non-Causal Feature Selection Algorithms for Biomarker Discovery in High-Throughput Biomedical Datasets**”, *Neural Information Processing Systems (NIPS) 2006 Workshop on Causality and Feature Selection*, 2006

Alexander Statnikov, Ioannis Tsamardinos, Constantin F. Aliferis, “**Using GEMS for Cancer Diagnosis and Biomarker Discovery from Microarray Gene Expression Data**”, ISMB 2005, (**Winner of Best Poster Award**)

### Participation in Funded Research Programs

**STREP :** Specific Targeted Research Projects      **RO1:** Research Project Grant Program  
**IP:** Integrated Project      **P20:** Exploratory Grants

Title	Source / Budget	Role	Dates
No 3446, EPILOGEAS : Causal Based Variable Selection for Omics Data	€36.000 GSRT	Principal Investigator	1/1/2014 – 6/1/2015
BIOΣΥΣ' ANAΠTYΞH	€2.517.000	Co-author, Co-investigator,	1/7/2013 –

ΔΙΕΠΙΣΤΗΜΟΝΙΚΩΝ Ε-ΡΕΥΝΗΤΙΚΩΝ ΔΡΑΣΤΗΡΙΟΤΗΤΩΝ ΣΤΗΝ ΚΑΤΕΥΘΥΝΣΗ ΤΗΣ ΒΙΟΛΟΓΙΑΣ ΣΥΣΤΗΜΑΤΩΝ	GSRT	<b>WP leader</b>	30/9/2015
No 316223 <b>InnovCrete</b> : Unlocking the innovative capacity of multidisciplinary structural biology-driven research in Crete	€4.003.534 EU FP7	<b>Co-author, Co-investigator</b>	1/11/2012 – 31/10/2015
No 11ΣΥΝ_10_415, <b>eMoDiA</b> : electronic Molecular Diagnostics Assistant	€776.430 GSRT	<b>Co-author, Co-investigator</b>	1/1/2013 – 30/6/2015
No 318552 <b>IdeaGarden</b> , An Interactive Learning Environment Fostering Creativity	€2.398.571 EU FP7	<b>Co-author, Co-investigator</b>	1/10/2012 – 30/9/2015
No 306000, STREP, <b>STATegra</b> , User-driven Development of Statistical Methods for Experimental Planning, Data Gathering, and Integrative Analysis of Next Generation Sequencing, Proteomics, and Metabolomics Data	€6.000.000 EU FP7	<b>Co-author, Co-investigator, WP Leader, FORTH's scientific responsible</b> , responsible for coordinating the WP regarding the development of integrative analysis algorithms for omics data	1/10/2012 – 30/9/2015
No 288533, IP, <b>RO-BOHOW.COG</b> , Web-enabled and Experience-based Cognitive Robots that Learn Complex Everyday Manipulation Tasks	€9.454.834, EU FP7	<b>Member</b> , responsible for dimensionality reduction algorithms applied to vision	01/02/2012 – 31/01/2016
ARISTEIA 2010, <b>CoRLAB</b> , Developing the Foundations for Modeling & Analysis of Spectrum Markets	€386.000, GSRT	<b>Co-author, Co-investigator</b> , responsible for applying integrative causal analysis algorithms to network data	1/7/2012 – 30/6/2015
<b>ΘΑΛΗΣ 20332</b> , Συμβιωτικά βακτήρια και Ομικές τεχνολογίες στην προοπτική νέων, φιλικών προς το περιβάλλον, μεθόδων ελέγχου επιβλαβών εντόμων: το παράδειγμα της Μεσογειακής μύγας (ΣΥΜΒΙΟΜΙΚΗ)	€600,000 Υπουργείο Παιδείας, Δια Βίου Μάθησης και Θρησκευμάτων (Ministry of Education, Lifelong Learning and Religion)	<b>Co-author, Co-investigator</b> , analysis of proteomics data and construction of classification models	1/7/2012 – 30/6/2015
No 248590, IP <b>REACTION</b> , Remote Accessibility to Diabetes Management and Therapy in Opera-	€4.412.539 EU FP7	<b>Co-author, Co-investigator</b> , Responsible for the construction of decision support systems for risk assessment of diabetes com-	01/03/2010-28/02/2014

tional Healthcare Networks		plications	
No 2934, <b>medium-size university grants</b> , Inducing Causal Models from Studies over Different Variable Sets	€1400 ELKE University of Crete	<b>Author, Principal Investigator</b> , involved in all aspects of the project	1/7/2010 - 21/03/2011
EC GA no 223920, <b>NoE VPH NoE</b> , The Virtual Physiological Human Network of Excellence	€806.877 EU FP7	<b>Member</b> , Responsible for coordinating the writing of the first draft “Roadmap to VPH”	01/06/2008-30/11/2012
No 027107, <b>STREP HEARTFAID</b> , A Knowledge based platform of services for supporting medical - clinical management of heart failure within elderly population	€3.220.115 EU FP6	<b>Member</b> , Responsible for constructing predictive models of occurrence of heart failure events	01/02/2006-31/01/2009
LM-7948-01, <b>ROI</b> Principled Methods for Very Large-Scale Causal Support Discovery	\$631.180 National Library of Medicine, USA	<b>Co-author, Co-investigator</b> . Involved in all aspects of the proposal.	01/07/2003 – 030/06/2006
LM007613-0, <b>P20</b> Biomedical Information Science and Technology Initiative (BISTI), Pilot Project Computational Models of Lung Cancer: Connecting Classification, Gene Selection, and Molecular Sub-typing	\$226.500 National Library of Medicine, USA	<b>Member</b> , Involved in biological data analysis	01/09/2002 – 30/08/2004

### Consulting Services

Jan. 2004, Prediction Sciences, <http://www.predict.net/>

### Patents

Patent Number: 7117185, Methods, system, and apparatus for causal discovery and variable selection for classification, Issue Date: 10/3/2006, Mail Code: CCE84101

Patent Number: 7912698, Method and system for automated supervised data analysis , Issue Date: March 22, 2011

**Summary Statistics (citations are computed using the tool “Publish or Perish” with query author name “tsamardinos”, date 4-6-2013. There are no other researchers under this name. Citation count includes self-references, references to Ph.D. thesis, and other works.**

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