Dr. Fotis E. Psomopoulos

Current Position

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Education

2010-2014 **Postdoctoral research**
Institute of Applied Biosciences (INAB), Centre for Research and Technology Hellas (CERTH), Greece
Postdoctoral research topic: *"Phylogenetic Data Analysis"*

2004-2010 **PhD student**
Electrical and Computer Engineering Department, Aristotle University of Thessaloniki, Greece
PhD Thesis Title: "*Parallel Data Mining and Analysis Algorithms in a Grid environment and applications in Bioinformatics*"

1999-2004 **Diploma of Electrical and Computer Engineering**
Electrical and Computer Engineering Department, Aristotle University of Thessaloniki, Greece (Grade: 8.17/10)
Diploma Dissertation Title: "*A Finite State Automata based data-mining algorithm for interesting rules extraction, with application in protein classification*"

Teaching Experience

Mar 2014 - today (Research Associate) Laboratory lectures on Bioinformatics supporting the undergraduate courses "*Biochemistry I*" and "*Biochemistry II*" of the School of Medicine, AUTH.

Oct 2014 - today (Academic Fellow) Lecturer in the undergraduate course "*Data Structures*" (5th semester) of the Dept. of Electrical and Computer Engineering, AUTH.

Oct 2013 - today (Research Associate) Lecturer in the Postgraduate Studies Program of the School of Medicine, AUTH, on "*Biomedical Applications in Grid Computing*".

Feb 2016 – Mar 2016 (Visiting Professor) "*Computer Programming*" course, Block 2 Spring 2016 (semester equivalent), Quest University Canada, Squamish, British Columbia, Canada.

Feb 2016 Certified Instructor for the Software and Data Carpentry foundation

Oct 2014 EBI Training School: Microme Workshop on Microbial Metabolism. Lecture *"Comparative genomics of metabolic*

		pathways and the computational inference of their ancestral states"
	Apr 2012 - Jun 2013 (*41 hrs)*	Seminar Lectures on «*Introduction to Bioinformatics*», Intelligent Systems and Software Engineering Laboratory (ISSEL) Department of Electrical and Computer Engineering, Aristotle University of Thessaloniki, Greece.
	Oct 2011 - Feb 2012	Adjunct Lecturer for the **9th** semester course "*Advanced Topics in Software Engineering*" Department of Informatics Engineering and Communication, University of Western Macedonia, Kozani.
	Oct 2005 – Jan 2010	Teaching Assistant on **5th** and **7th** semester course "*Data Structures*" (Professor P. A. Mitkas) Department of Electrical and Computer Engineering, Aristotle University of Thessaloniki, Greece.
Diploma Thesis Advisor	Since 2005, acted as co-advisor (advisor: Prof. P. A. Mitkas) for 11 undergraduate students towards their diploma thesis at the Department of Electrical and Computer Engineering, Aristotle University of Thessaloniki, Greece; 4 as a doctoral candidate and 7 after receiving the PhD. Of particular note are the following:	
	Apr 2015, O. Vrousgou	"Design and implementation of a Grid Computing framework for enabling large-scale comparative genomics processes", 2nd prize in the IEEE EMBS Greece Chapter competition 2015.
	July 2012, D. Vitsios	"Detecting species evolution through metabolic pathways", 2nd prize in the IEEE EMBS Greece Chapter competition 2012.
Research Experience	Dec 2014 - today	**RAPP** - An open source software platform to develop and distribute Robotics Applications for social inclusion
	Jul 2010 - May 2014	**MICROME** – A Knowledge-Based Bioinformatics Framework for Microbial Pathway Genomics, EU Framework Programme 7 Collaborative Project. Scientific Advisor: Prof. C. A. Ouzounis.
	Sep 2005 – Apr 2009	**ASSIST** – ASsociation Studies assisted by Inference and Semantic Technologies European Commission IST Program, 2005-2007. Scientific Advisor: Prof. P. A. Mitkas.
	Jul 2004 – Sep 2009	**EPEAEK II** (National funded) – Operational Program for Education and Initial Vocational Training, Department of Electrical and Computer Engineering, Aristotle University of Thessaloniki, Greece. *Software Development*, Research project: "**e-THMMY**". Scientific Advisor: Prof. P. A. Mitkas.
Administration	Co-organized 2 international and 4 national workshops. Of particular note are the following:	
	Oct 2015	National training workshop "NGS data analysis using Chipster and the EGI Federated Cloud", Institute of Applied Biosciences, CERTH, Greece
	May 2014	International workshop "Going beyond grid to enable life science data analysis" at the EGI Community Forum 2014, Helsinki, Finland
	Sep 2013	International workshop "Scaling up life sciences with grids and clouds - stories and recommendations» at the EGI Technical Forum 2013, Madrid, Spain

	Additional management roles	
	Jul 2010 - today	Participation in writing over 10 Grant proposals (as lead in 4).
	Nov 2013 - today	Technical coordinator of the EU-funded FP7 project RAPP
	May 2015 – today	Quality Assurance manager at the Information Processing Lab, Dept. of Electrical and Computer Engineering, AUTH.
	Dec 2014 –Aug 2015	Coordinator of the EGI Virtual Team on "Integrating life science reference datasets within EGI" https://wiki.egi.eu/wiki/VT_Life_Science_Data_Integration
Professional Experience	Jul 2010 - today	*Bioinformatic tools development*, Institute of Applied Biosciences (INAB), Centre for Research and Technology Hellas (CERTH). Director: Prof. Kostas Stamatopoulos.
	Jun 2005 - today	*Software Design and Development*, Informatics and Telematics Institute (ITI), Centre for Research and Technology Hellas (CERTH). Director: Dr. D. Tzovaras.
	Jan 2011 – Aug 2011	*Software Engineer* and *Systems Administrator* at the Informatics Section of the Hellenic Supreme Joint War College (SJWC). Responsible for application development, installation and maintenance of the computer network, user administration (*obligatory military duty – special scientist / analyst*)
	Jul 2004 - today	*Software Development*, Intelligent Systems and Software Engineering Laboratory (ISSEL), Department of Electrical and Computer Engineering, Aristotle University of Thessaloniki, Greece. Director: Prof. P. A. Mitkas.
Technical Skills	• Bioinformatics tools: *BLAST, Omega, Muscle, MCL, Tophat, Cufflinks, Galaxy* • Data processing and simulation frameworks: *R*, *MATLAB, Mathematica* • Programming languages: *Java SE, Java EE, C/C++/C#, Perl, Python, Fortran* • Grid and Cloud Computing Frameworks: *EGI OCCI, Globus Toolkit, gLite* • Unix Shell scripting • Parallel Programming frameworks: *CUDA 2.0, MPI* • Relational Database Management Systems programming/administration: *MS SQL Server, Oracle 9i, MySQL, Postgresql*	
Awards	• Excellent Science Post-doctoral grant, Aristotle University of Thessaloniki Research Committee, 2014 • EGI Champion on Bioinformatics (2013 - today) • Student Grant: 1st European Summer School on Knowledge Discovery for Ubiquitous Computing, Dept. Computer Science VIII, University of Dortmund, Germany, 14-16 September 2006. • Graduation Alumni 2004 rank 9th (July 2004, score: 8.17) • Undergraduate studies excellence award, Technical Chamber of Greece, Athens, March 2007 (score: 8.83)	
Publications *(indicative)*	**F. E. Psomopoulos** and P. A. Mitkas: *Data Mining in Proteomics using Grid Computing*, Handbook of Research on Computational Grid Technologies for LifeSciences, Biomedicine and Healthcare, Editor: Mario Cannataro, Laboratory of Bioinformatics, University Magna Græcia of Catanzaro, 88100 Catanzaro, Italy, 2009, (chapter 13, pp. 245-267), UK: IGI Global. A. Xanthopoulou, **F. E. Psomopoulos**, I. Ganopoulos, M. Manioudaki, A. Tsaftaris, I. Nianiou-Obeidat, P. Madesis, "*De novo transcriptome assembly of two contrasting pumpkin cultivars*", Genomics Data 7 (2016) 200–201, doi: 10.1016/j.gdata.2016.01.006 Duarte AMS, **Psomopoulos FE**, Blanchet C, Bonvin AMJJ, Corpas M, Franc A, Jimenez RC, de Lucas JM, Nyrönen T, Sipos G and Suhr SB, "*Future opportunities and trends for e-infrastructures and life sciences: going beyond the grid to enable*	

	life science data analysis", Frontiers in Genetics, Vol. 6 No. 197 (2015), doi: 10.3389/fgene.2015.00197 D. M. Vitsios, **F. E. Psomopoulos**, P. A. Mitkas and C. A. Ouzounis, "*Inference of pathway decomposition across multiple species through gene clustering*", International Journal on Artificial Intelligence Tools, Volume No. 24, No. 1 (2015) **F. E. Psomopoulos**, P. A. Mitkas, C. A. Ouzounis, "*Detection of Genomic Idiosyncrasies Using Fuzzy Phylogenetic Profiles*", PLoS ONE Vol 8, No 1 (2013) **F. E. Psomopoulos**, V. I. Siarkou, N. Papanikolaou, I. Iliopoulos, A. S. Tsaftaris, V. J Promponas and C. A. Ouzounis : "*The Chlamydiales Pangenome Revisited: Structural Stability and Functional Coherence*", Genes, Vol 3, No 2 (2012), pp. 291-319. **F. E. Psomopoulos**, Pericles A. Mitkas: "*Multi Level Clustering of Phylogenetic Profiles*", Bioinformatics and Bioengineering (BIBE 2010), special issue of International Journal on Artificial Intelligence Tools, Vol 21, No 5: 1240023 (2012) **F. E. Psomopoulos**, P. A. Mitkas:"*Bioinformatics Algorithm Development for Grid Environments*", Journal of Systems & Software, vol. 83, No 7, (2010), pp. 1249-1257 **F. E. Psomopoulos**, P. A. Mitkas, C. S. Krinas, I. N.Demetropoulos :"*A grid-enabled algorithm yields Figure-Eight molecular knot*", Molecular Simulation, vol.35, No 9 (2009), pp.725-736

Publication statistics	• Participation in more than 80 conferences
	• 48 published articles
	  ○ 1 book chapter
	  ○ 10 journals
	  ○ 24 conferences with peer-reviewed proceedings
	  ○ 11 announcements in conferences
	  ○ 2 articles in general publications
	• Total impact factor: 18.625
	• Citations: 52
	• h-index: 4
	• i10-index: 2
	• Reviewer in 8 international journals
	  ○ SoftwareX, Elsevier
	  ○ PLoS ONE
	  ○ PeerJ
	  ○ Journal of Biomedical Informatics, Elsevier
	  ○ Computer Methods and Programs in Biomedicine, Elsevier
	  ○ International Journal on Artificial Intelligence Tools
	  ○ Journal of Systems and Software, Elsevier
	  ○ Journal of Parallel and Distributed Computing, Elsevier
	• Member of the International Society for Computational Biology (ISCB)
	• Member in IEEE and the Computer Society