
CURRICULUM VITAE

Aristidis G. Vrahatis, MS, PhD

PERSONAL DATA



Date of Birth	25/05/1987
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EDUCATION

2006-2011	Diploma in Computer Science, Department of Computer Engineering & Informatics, University of Patras, Greece.
2011-2013	MSc in Computer Science and Engineering, Department of Computer Engineering & Informatics, University of Patras, Greece.
2013- 2016	PhD in Department of Computer Engineering & Informatics

THESES

Diploma Thesis	Mammographic image analysis for microcalcification detection with Wavelet Transform and classification tools.
Master Thesis	Fuzzy evolutionary clustering in large scale biological data
PhD Thesis	Algorithmic techniques of Systems Biology and Bioinformatics

RESEARCH INTERESTS

Systems Biology

Bioinformatics

Network Medicine

Computational Biology

PUBLICATIONS

PUBLICATIONS IN SCIENTIFIC JOURNALS

- J1. **A.G. Vrahatis**, K. Dimitrakopoulou, P. Balomenos, A.K. Tsakalidis, A. Bezerianos: "CHRONOS: A time-varying method for microRNA-mediated sub-pathway enrichment analysis". *Bioinformatics*, 2016, 32(6).
- J2. **A.G. Vrahatis**, P. Balomenos, A.K. Tsakalidis, A. Bezerianos: DEsubs: an R/Bioconductor package for flexible identification of differentially expressed subpathways using RNA-seq experiments, *Bioinformatics*, 2016, In Print (DOI: 10.1093/bioinformatics/btw544)
- J3. K. Dimitrakopoulou, **A.G. Vrahatis**, A. Bezerianos: "Integromics network meta-analysis on cardiac aging offers robust multi-layer modular signatures and reveals micronome synergism", *BMC Genomics*, 16 (1), 147, 2015
- J4. K. Dimitrakopoulou, **A.G. Vrahatis**, E. Wilk, A.K. Tsakalidis, A. Bezerianos: "OLYMPUS: A hybrid fuzzy clustering tool for time series gene expression. Case Study: Influenza A kinetic model", *Comput Methods Programs Biomed.* 2013, 111:650-61

PUBLICATIONS IN CONFERENCES

- C1. **Aristidis G. Vrahatis**, K. Dimitrakopoulou, G.N. Dimitrakopoulos, K.N. Sgarbas, A.K. Tsakalidis, A. Bezerianos: "Network-based modular markers of aging across different tissues", XIII Mediterranean Conference on Medical and Biological Engineering and Computing 2013, 25-28 September 2013, Seville, Spain (IFMBE Proceedings 2014, 41:1849-1852).
- C2. **Aristidis G. Vrahatis**, G.N. Dimitrakopoulos, A.K. Tsakalidis, A. Bezerianos: "Identifying miRNA-mediated signaling subpathways by integrating paired miRNA/mRNA expression data with pathway topology". In *Engineering in Medicine and Biology Society (EMBC), 2015 37th Annual International Conference of the IEEE* (pp. 3997-4000). IEEE, 2015
- C3. **Aristidis G. Vrahatis**, Georgios N. Dimitrakopoulos, Athanasios Tsakalidis and Anastasios Bezerianos, Structural and functional communities of longevity-associated genes in signaling pathways, 6th Panhellenic Conference on Biomedical Technology, 2015, Athens, Greece
- C4. K. Dimitrakopoulou, **Aristidis G. Vrahatis**, G.N. Dimitrakopoulos, A. Bezerianos: "Aging Integromics: Module-based markers of heart aging from multi-omics data", 15th International conference on Biomedical Engineering, 4-7 December 2013, Singapore, (IFMBE Proceedings 2014, 43:104-107), 2014
- C5. Georgios N. Dimitrakopoulos, **Aristidis G. Vrahatis**, Konstantina Dimitrakopoulou, Athanasios K. Tsakalidis, Kyriakos Sgarbas and Anastasios Bezerianos. Module-Based Cross-Tissue Pathway Identification in Aging, 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Osaka, Japan, 2-7/7/2013

- C6. Georgios N. Dimitrakopoulos, **Aristidis G. Vrahatis**, Panos Balomenos, Kyriakos Sgarbas and Anastasios Bezerianos. Age-related subpathway detection through meta-analysis of multiple gene expression datasets. In Digital Signal Processing (DSP), 2015 IEEE International Conference on, pp. 539-542. IEEE, 2015.
- C7. Georgios N. Dimitrakopoulos, **Aristidis G. Vrahatis**, Kyriakos Sgarbas and Anastasios Bezerianos, Gene expression trend analysis in Aging, 6th Panhellenic Conference on Biomedical Technology, 2015, Athens, Greece
- C8. Georgios N. Dimitrakopoulos, Panos Balomenos, **Aristidis G. Vrahatis**, Kyriakos Sgarbas, and Anastasios Bezerianos, Identifying disease network perturbations through regression on gene expression and pathway topology analysis, In Engineering in Medicine and Biology Society (EMBC), IEEE, 16-20 Aug 2016, Orlando, USA.
- C9. **Aristidis G. Vrahatis**, Konstantina Dimitrakopoulou, Athanasios K. Tsakalidis and Anastasios Bezerianos, SubPathTimer: a time-varying subpathway enrichment analysis method. ECCB'14 13th European Conference on Computational Biology. 2014, Strasbourg
- C10. **Aristidis G. Vrahatis**, G. N. Dimitrakopoulos, A. K. Tsakalidis and A. Bezerianos, Cardiac aging signatures in the form of network communities, Biology of Ageing Conference, Singapore, 22-24 October 2015.
- C11. K. Dimitrakopoulou, **Aristidis G. Vrahatis**, A Bezerianos. Inferring systems-level cardiac aging biomarkers through integromics network analysis. Cardiovascular research 103, S12-S12
- C12. Georgios Dimitrakopoulos, Konstantina Dimitrakopoulou, **Aristidis G. Vrahatis**, Kyriakos N. Sgarbas, Anastasios Bezerianos. An integrative meta-analysis method to reveal age-related cross-tissue pathways. 27th International Mammalian Genome Conference, 15 -18 September 2013, Salamanca, Spain
- C13. A. Bezerianos, **Aristidis G. Vrahatis**, P. Balomenos and G. N. Dimitrakopoulos, Deciphering the Complexity of Human Diseases via Network Medicine, Advanced Health Informatics, Gordon Research Conference, 17-22 July 2016, Hong Kong, China.

CITATIONS

- [1] Torshizi, A. D., & Zarandi, M. H. F. (2014). Alpha-plane based automatic general type-2 fuzzy clustering based on simulated annealing meta-heuristic algorithm for analyzing gene expression data. Computers in biology and medicine. **(It cites the paper J4)**
- [2] Sandhu, R., Gill, H. K., & Sood, S. K. (2015). Smart monitoring and controlling of pandemic influenza A (H1N1) using social network analysis and cloud computing. Journal of Computational Science. **(It cites the paper J4)**
- [3] Seeger, T., & Boon, R. A. (2015). MicroRNAs in cardiovascular ageing. The Journal of physiology. **(It cites the paper J3)**

- [4] da Costa, J. P., Rocha-Santos, T., & Duarte, A. C. (2015). Analytical tools to human assess aging: the rise of geri-omics. *TrAC Trends in Analytical Chemistry*. **(It cites the paper J3)**
- [5] Zhang, J., Le, T. D., Liu, L., He, J., & Li, J. (2016). Identifying miRNA synergistic regulatory networks in heterogeneous human data via network motifs. *Molecular BioSystems*. **(It cites the paper J3)**
- [6] da Costa, J. P., Rocha-Santos, T., & Duarte, A. C. (2015). Analytical tools to human assess aging: the rise of geri-omics. *TrAC Trends in Analytical Chemistry*. **(It cites the paper C4)**
- [7] Xu, P., Zhu, Y., Sun, B., & Xiao, Z. (2016). Colorectal cancer characterization and therapeutic target prediction based on microRNA expression profile. *Scientific Reports*, 6, 20616. **(It cites the paper J1)**
- [8] Fan, Z., et al. (2016) "MiR-125a promotes paclitaxel sensitivity in cervical cancer through altering STAT3 expression." *Oncogenesis* 5.2 (2016): e197. **(It cites the paper J3)**
- [9] Nascimento, M., et al. (2016) "Bayesian forecasting of temporal gene expression by using an autoregressive panel data approach." *Genetics and molecular research: GMR* 15.2. **(It cites the paper J4)**
- [10] Smita, S., Lange, F., Wolkenhauer, O., & Köhling, R. (2016). Deciphering hallmark processes of aging from interaction networks. *Biochimica et Biophysica Acta (BBA)-General Subjects*. **(It cites the paper J3)**
- [11] Smita, S., Lange, F., Wolkenhauer, O., & Köhling, R. (2016). Deciphering hallmark processes of aging from interaction networks. *Biochimica et Biophysica Acta (BBA)-General Subjects*. **(It cites the paper C4)**
- [12] Yoshikawa, M., et al. (2016) MicroRNA memory I: the positive correlation between synergistic effects of microRNAs in cancer and a novel quantum scoring system. *Journal of Advances in Medical and Pharmaceutical Sciences*, 5(4), 1-16. **(It cites the paper J3)**

AWARDS

1. 3rd Paper Award in Young Research Competition in XIII Mediterranean Conference on Medical and Biological Engineering and Computing, 2013
2. Selected for Travel Fellowship to attend the conference "Biology of Aging", Singapore 22-24 October, 2015
3. Best Poster Award in Best Poster Competition in Cardiovascular research Conference, Barcelona 2014
4. Best Poster Award in Workshop MET-GR III: Metabolic and Protein Network Analysis in Systems Biology, Sep 18-20 2014, Patras GREECE