Elias S. Manolakos, *Assoc. Professor*

Director, Graduate Program on Information Technology in Medicine and Biology

University of Athens

Dept. of Informatics and Telecommunications

eliasm@di.uoa.gr

Adjunct Professor

Northeastern University, Boston

Electrical and Computer Eng. Dept.

Academic Appointments:

University of Athens	Dept. of Informatics and Telecommunications (2004-)
Northeastern University, Boston	Electrical and Computer Engineering (1989-2004)
SUNY Stony Brook	Electrical and Computer Engineering (1988-89)
Princeton University	Electrical and Computer Engineering (1987-89)

Education:

U. of Southern California	Computer Engineering	PhD	1985-89
U. of Michigan	Electrical Engineering	MSEE	1981
NTU Athens	Electrical Engineering	Diploma	1980

Research Interests:

Statistical Signal/Image processing, Machine Learning, Predictive modeling
Applications in Computational & Systems Biology

High Performance and Embedded Computing

Sensor Networks and Mobile Computing

Statistical Signal/Image Processing, Machine Learning, Predictive modeling

- Machine learning methods for high throughput proteomics image analysis
  [Proteomics 2011, Proteomics 2009]
- 3D Visualization methods and tools for integrative proteomics
  [BMC Bioinformatics 2011, J. Biomed. Inform. 2009]
- Improving protein homology inference using protein structure information and machine learning methods *[BMC Bioinformatics, in preparation]*
- Tools for MS spectra analysis and clustering *[IEEE CBMS 2008]*
- Environmental predictive modeling
  [Ecol. Modeling 2011,2009] , [Water Research 2011, 2009]
  - Prediction of biological integrity based on environmental similarity
  - Linking indices of biotic integrity to environmental and land use variables
  - Extracting knowledge on the links between the water body stressors and biotic integrity
  - Characterization of biological responses under different environmental conditions – A hierarchical modeling approach

Computational Systems Biology

[in collaboration with BFRAA]

- In silico modeling of alpha-synuclein's oligomerization effects on dopaminergic neurons homeostasis *[ICSB 2011]*
- Mathematical modeling and simulation of the INFβ enhanseosome assembly
- Modeling microbial biofilms formation and evolution – quorum sensing *[Thales GSRT project, 2012-15]*
- Genetic circuits design and simulation –

  Lessons learned in electrical engineering applied to synthetic biology

High Performance and Embedded Computing

- System on Chip design and FPGA implementation for real-time large biomolecular networks simulation *[IEEE FPL 2011]*
- Methods to accelerate protein structures comparison

  [Hrakleitos GSRT Grant, 2011-14]
- System on Chip Design and FPGA implementation for the kNN classifier *[ACM Trans. Embedded Computing Systems, 2012]*
- MPSoC Networks on Chip for implementing sequential Monte Carlo methods
- **SysPy -** Using Python for processor-centric SoC hardware/ software co-design *[IEEE ICECS 2010]*

Sensor networks and mobile computing

(for e-health, AAL, environment al monitoring)

- *PeerAssist:* A P2P platform supporting virtual communities to assist independent living of senior citizens *[EU-AAL project, 2010-13]*
- *p2pSOA*-A middleware architecture to facilitate the development of mobile P2P collaborative service applications *[IEEE ICPS 2008, patent pending]*
- Smart phone applications in Electrocardiography *[in collaboration with BFRAA]*
- Predicting the spatiotemporal evolution of hazardous phenomena using sensor networks *[IEEE ICCASP 2011, SMC2011]* , with application to wildfires front tracking *[EU FP6 SCIER project 2008-11, Thales GSRT project, 2012-15]*

Ευχαριστώ πολύ !

THANK YOU for your attention !