Miltiadis Kyriakakos

Evoias 46, Metamorfosi 14451, Athens
Mobile Tel: *(+30) 6977716725*   ***E-mail:*** <u>*miltos@di.uoa.gr*</u>

Education

2000-2005:   **PhD in Informatics and Telecommunications, National and Kapodistrian University of Athens, Greece.**
PhD Thesis title: Simulation of Movement and Path prediction in mobile and wireless cellular networks.
Supervisors: Professor L. Merakos and Professor S. Hadjiefthymiades

Brief Synopsis of Research: A platform for the simulation of mobility functions (e.g., protocols, application architectures) has been developed. This platform, named realistic mobility pattern generator (RMPG), is based on the assumption that real humans exhibit considerable spatial and temporal regularity in their moves. The simulation environment is based on the random way-point algorithm implemented in the network simulation (ns) tool. Path prediction has been considered for use in the context of mobile and wireless computing toward more efficient network resource management schemes. Path prediction allows the network and services to further enhance the quality of service levels the user enjoys. Such mechanisms are mostly meaningful in infrastructures like wireless LANs. We presented a path prediction algorithm that exploits a machine learning algorithm of learning automata. The decision of the learning automaton is driven by the movement patterns of a single user but is also affected by the aggregated patterns demonstrated by all users. Simulations of the algorithm, performed using the Realistic Mobility Pattern Generator, show increased prediction accuracy.

1998-1999:   **MSc in Communication Systems, Electrical and Electronic Engineering of University of Wales, Swansea, United Kingdom.**
MSs Dissertation title: Investigation into Photo Recognition
Supervisor: Dr. John Mason
My project examines a computer program, written in C language, which gets as an input a photo and extracts as an output a digital code of the image in bits of 1 and 0. In the photographs that have been used we have added artificial and natural noise in order to investigate the efficiency of the algorithm that has been used to provide the digital "signature" of the photos before and after the added noise. Additionally we proposed a few optimizations for the functionality of the

algorithm and we tested the method of Histogram Equalization for the enhancement of the program.

1992-1998: **B.Sc. in Physics, University of Crete, Department of Physics, Crete, Greece.**

Employment

April 2000 – December 2001:	**IST Work Program – Project**: WINE (Wireless Internet Networking) – **Participants:** Spain, Italy, Norway, France, England and Greece. **Objective**: The aim of the project is to build QoS aware wireless IP networks. In WINE we studied the necessary technologies to build fully IP-based optimised wireless Internet connections. **Personal Involvement**: Study of the micro- (HAWAII, Cellular IP and Hierarchical Mobility Model) and macro- (Mobile IPv4 and IPv6) mobility protocols.
July 2000 – December 2001:	**IST Work Program – Project**: STARFISH (STate of ARt FInancial Services for the inHabitants of isolated areas) **– Participants:** France, Germany, Finland and Greece. **Objective:** The project will identify, design, develop, apply and evaluate business models and technological solutions for the implementation of the virtual bank branch. **Personal Involvement**: Research on the technological solutions could be used for the integration of the bank branch and specification on the communication protocol.
J**uly 2001 – April 2003:**	**Work Program:** R&D-O.T.E (Greek Telecom Organization) – **Project:** FMI-OTE – **Participants:** R&D-O.T.E, National & Kapodistrian University of Athens, National & Technical University of Athens **Objective:** The design and development of basic applications/services on Fixed and Mobile Integrated Networks (Voice over IP, Web Browsing, Teleconference, Multimedia Messaging, Unified Messaging, VHE Service) **Personal Involvement:** Design and development of the Virtual Home Environment (VHE) service.
January 2002 – August 2002:	**IST Work Program – Project:** EURO-CITI – **Participants:** Spain, Germany, France, England and Greece. **Objective:** Development of tele-voting and tele-consultation services for the citizen (Online Democracies) by using technologies as VPN, GSM/WAP, InfoKiosks, Smart-Cards – **Subject of Greek partnership**: Design and development of the network infrastructure and of the required network services/protocols – **Personal Involvement**: Participate in the activities of design and development of a secure network infrastructure based on technologies as IPSec, PKI, SSL, LDAP, Java/JavaBeans. Use of the Unified Modeling Language (UML).
July 2001 – December 2002:	**Work Program:** EURESCOM **Project:** P1101"Always On" – **Participants:** England, Germany, Norway, Island, Czech and Greece

	Objective: The Design and Development of the Device Unified Service (DUS) **Personal Involvement:** Participate in the design of the DUS and the installation of the Service in the testbed. Accomplish of the usability tests and focus groups results.
December 2002 – June 2004:	**IST Work Program – Project:** PoLoS (Integrated Platform for Location Based Services) – **Participants:** Switzerland, Germany, Spain, Cyprus and Greece – **Objective**: The development of a general platform for the deployment, introduction and operation of telecommunication services that dependent on the position (LBS, Location based Services). Positioning Technologies, GIS, OSA/MExE. **Personal Involvement**: Design and development of a J2EE architecture.
July 2004 – June 2005:	Participate in the research/growth activities of the Communication Network Lab (CNL) and the research group of pervasive computing of the department of Informatics and Telecommunications of university of Athens.
May 2005 – May 2006	Accomplishment of Military Service. Hellenic Army – Signal Corp – Etiquette and aide office of the Chief of Hellenic Army General Staff.
January 2006 – June 2006:	Participate in the research/growth activities of the Communication Network Lab (CNL) and the research group of pervasive computing of the department of Informatics and Telecommunications of university of Athens.
July 2006 – June 2007:	**Work Program ΓΓΕΤ – Project:** POLYSEMA (Multimedia Applications Supported by Semantics). – **Participants:** Siemens A.E., National Kapodistrian University of Athens, Lumiere Cosmos Communications LCC S.A. **Objectives:** The main objective of POLYSEMA is the development of required infrastructure for a smart multimedia gateway that will manage ingoing and stored multimedia content with semantic metadata. This infrastructure will increase application area and improve the use of multimedia applications in residential environments. **Personal Involvement:** System requirements, design and specifications.
22 June 2007 - 19 June 2014	Public employer in the National and Kapodistrian University of Athens in the Department of Informatics and Telecommunications. Subject Occupancy: System Administrator in the Unix/Linux Servers and Labs. Description of duties:

- Operate, administer, maintain, upgrade and back up the central main UNIX/LINUX Servers of the Department.
- Administer and maintain the user accounts and their data.
- Administer, host and support of personal, research and conference web pages.
- Technical Support of electronic mailing lists for research programs and department's classes.
- Operate, administer, maintain and upgrade of the Linux/Unix Lab.

- Technical Support of lab courses in the Linux/Unix Lab.
- Helpdesk for the department of Informatics and Telecommunications.

20 June 2014 - Today	**Special Laboratory Educational Staff** – Department Informatics and Telecommunications – National and Kapodistrian University of Athens Employment objective: Lab courses
June 2015 - Today	**Work Program Horizon 2020 – Project:** RAWFIE (Road-, Air-, and Water-based Future Internet Experimentation). – **Participants:** Greece, Italy, Portugal, France, Germany, Switzerland, Bulgaria, Spain. **Objective:** The basic idea is the development of a strategic experimental infrastructure where automated, remote operation will succeed of a large number of robotic devices for assessing the performance of different technologies in networking, sensing and mobile/autonomic application domains. **Personal involvement:** Support and administer of the main infrastructure of RAWFIE platform. Research on the FIRE tools (MySlice, SFA, OMNI). Research on the Kafka message bus. Research on the OpenStack cloud computing.

Academic Experience

March 2003 – May 2003:	Tutor of courses for MS Office 2003 in the municipality of Pireas (Ν.Ε.Λ.Ε).
Academic Year: 2006 – 2007	Course: **Special Subjects in Networks**. Half-assignment in the postgraduate program in the Department of Informatics and Telecommunications of University of Athens. 4th Direction – Communication Systems and Networks. Spring semester 2007.
Academic Year: 2007 – 2008	Course: **Advanced Networking Mobile Communications.** One third assignment in the postgraduate program in the Department of Informatics and Telecommunications of University of Athens. 4th Direction – Communication Systems and Networks. Spring semester 2008.
Academic Year: 2007 – 2008	Lecturer Π.Δ. 407/80 in the Department of Telecommunications Science and Technology in the University of the Peloponnese with assignments at the undergraduate courses: **Object Oriented programming** & **Data Structures**.
Academic Year: 2014 – 2015	Lab support of the undergraduate courses: **System Programming** & **Design and Use of Data Bases**. Spring semester 2015
Academic Year: 2015 – 2016	Lab support of the undergraduate courses: **Operating Systems** & **Graphics**. Winter semester 2015
Academic Year: 2015 – 2016	Lab support of the undergraduate courses: **Data Structures** & **Design and Use of Data Bases**. Spring semester 2016

General

2000-today: Member of the Communication Network Lab of the Department of Informatics and Telecommunications of University of Athens.

2004-today: Member of the Pervasive Computing Group of the Department of Informatics and Telecommunications of University of Athens.

Computer Science Knowledge

- **Programming Languages:** JAVA, C, Fortran, SQL, HTML.
- **Data Bases:** MySQL, MySQL WorkBench.
- **Operating Systems:** MS Windows 2007, MS Office 2007, Ubuntu 14.04 (Linux), Solaris (Unix).
- **Administer and Support of the main network services of the department infrastructure:** NFS, DNS, LDAP, mailing lists.

Foreign Languages

- English

Research Interests

- Prediction algorithms for mobile motion and resource allocation.
- Mobile sensor networks.
- Openstack cloud services.
- Future Internet Research and Experimentation (FIRE) system tools

Presentations

- **"Realistic Mobility Pattern Generator (RMPG) (For the Performance Evaluation of Mobile Computing Mechanisms) and Path prediction Algorithm",** Workshop on "Methods and Tools for the Modelling of Future Mobile Communication Systems", November 13-14, Πανεπιστήμιο Essen, Essen 2003.

- **"Agent Technology for Services and Applications", Workshop on "Advances in Mobile Communication Systems"**, January 16-17, National and Kapodistrian University of Athens, Athens 2003.

Co-Supervised Thesis

1. L. Skoutaris, K. Stamopoulou (Master thesis), April 2003, **"Mobile Agents and Virtual Home Environment"**, (Prof. L. Merakos)
2. P. Lyropoulou, E. Apostolidou (undergraduent thesis), May 2004, **"Mobile Motion Prediction Algorithm based on Past Itinerary Patterns"**, (Prof. L. Merakos)
3. A. Lyssari, G-N. Pliameri (undergraduent thesis), June 2004, **"LeZi-update: Mobile Prediction Algorithm"**, (Prof. L. Merakos)
4. D. Karaiskos, E. Armanidi (undergraduent thesis), October 2004, **"Applying the Mobile Agent Technology for Service Adaptation and Roaming in 3rd Generation Networks"**, (Prof. L. Merakos) (co-supervized by Bill Baousis)
5. K. Liagos (Master thesis), November 2004, **"Analysis – Parametric Dimensioning and Optimization in a Motion Prediction Algorithm"**, (Prof. Stathis. Hadjiefthymiades)
6. A. Zalaxwri, D. Mitropoulos (undergraduent thesis), October 2005, **"A Prediction Algorithm in Mobile Computing"**, (Prof. Stathis. Hadjiefthymiades)
7. S. Sidereas, G. Kavvadas (undergraduent thesis), June 2008, **"Observing and Tracking a mobile user in a Wireless Network"**, (Prof. L. Merakos) (co-supervized by Giannis Marias)

Publications

- ### *Magazines*

1. V. Baousis, M. Kyriakakos, S. Hadjiefthymiades and L. Merakos, "**A Multiagent Platform for Ubiquitous Service Provision**", in Journal of network and systems management (JNSM), Volume 17, Issue 4, December 2009, pp. 371 – 396.
2. V. Baousis, M. Kyriakakos, S. Hadjiefthymiades and L. Merakos, "**Performance Evaluation of a Mobile Agent-Based Platform for Ubiquitous Service Provision**", to appear in Pervasive and Mobile Computing Journal (PMCJ), Elsevier, Vol. 4, Number 5, October 2008, pp. 755–774.
3. M. Kyriakakos, N. Frangiadakis, S. Hadjiefthymiades, L. Merakos, **"RMPG: A Realistic Mobility Pattern Generator for the Performance Assessment of Mobility Functions"**, in Journal of Simulation Modeling Practice and Theory (SIMPAT), Elsevier Science, Vol.21, Issue 1, 2004, pp.1–13.
4. M.Kyriakakos, S.Hadjiefthymiades, N.Frangiadakis, L.Merakos, **"Enhanced Path Prediction for Network Resource Management in Wireless LANs"**, in IEEE Wireless Communications Magazine, Special issue on "The Evolution of Wireless LANs and PANs", Vol.10 No.6, December 2003, pp 62–69.

5. M.Kyriakakos, N. Frangiadakis, S. Hadjiefthymiades, L. Merakos, **"A Realistic Mobility Pattern Generator for the Performance Evaluation of Mobile Computing Mechanisms"** , in International Journal of Communication Systems, Wiley InterScience, Vol.16, Issue 10, December 2003, pp. 935–950.

- *Conferences*

1. T. Anagnostopoulos, C. Anagnostopoulos, S. Hadjiefthymiades, M. Kyriakakos, A. Kalousis, "**Predicting the location of mobile users: a machine learning approach**",In proceeding of: ACM International Conference on Pervasive Services (ICPS09), At Imperial College, London, UK. 07/2009, pp. 65-72.
2. M. Kyriakakos, S. Hadjiefthymiades and L. Merakos, "**Parametric Dimensioning and Enhancements of a Path Prediction Algorithm**", in the proceedings of the 18th Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC'07), Athens, September, 2007.
3. Theodoros Anagnostopoulos, Christos Anagnostopoulos, Stathes Hadjiefthymiades, Alexandros Kalousis, Miltos Kyriakakos, **"Path Prediction through Data Mining",** in the proceedings of the IEEE International Conference on Pervasive Services (ICPS), July, 2007, Istanbul, Turkey, pp.128-135.
4. Vasileios Baousis, Miltiadis Kyriakakos, Stathes Hadjiefthymiades, L. Merakos, **"Performance Evaluation of a Mobile Agent-Based VHE Architecture in 3G Networks"**, in the proceedings of IEEE International Conference on Pervasive Services (ICPS)**,** Santorini, Greece, July, 2005, pp. 353–360.
5. Miltiadis Kyriakakos, Vasileios Baousis, Stathes Hadjiefthymiades, Lazaros Merakos **"Ubiquitous Service Provision in Next Generation Mobile Networks"**, in the proceedings of the 13th IST Mobile & Wireless Communications Summit, Lyon, France, June, 2004, pp. 741-745.
6. M. Kyriakakos, S. Hadjiefthymiades, N. Frangiadakis, L. Merakos, **"Multi-user Driven Path Prediction Algorithm for Mobile Computing"**, in the proceedings of 14th Workshop on Network-Based Information Systems (Nbis), Database and Expert Systems Applications (DEXA), Prague, Czech Republic, September, 2003, pp.191–195.
7. N. Frangiadakis, M. Kyriakakos, S. Hadjiefthymiades, L. Merakos, **"Realistic Mobility Pattern Generator: Design and Application in Path Prediction Algorithm Evaluation"**, in the proceedings of IEEE PIMRC conference**,** Lisbon, Portugal, September, 2002, Vol.2, pp. 765-769.

References

I have more than 70 citations on the above publications.