

# MARINA E. BITSAKI

Department of Applied Mathematics  
University of Crete  
P.O. Box 2208  
71306, Heraklion, Crete

Tel: +302810-393724  
+306972-003446  
E-mail: [marina@tem.uoc.gr](mailto:marina@tem.uoc.gr)

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## EDUCATION

### **Ph.D. in Computer Science, 2004**

#### **University of Crete, Computer Science Department**

Research area: Computer Networks and Digital Communications

Dissertation: Auction Based Allocation and Pricing of Telecommunication Resources

Advisor: Christos Nikolaou

### **M.Sc in Mathematics, 1998**

#### **University of Essex, Mathematics Department**

Research area: Statistics and Operational Research

Thesis Title: Effective bandwidths for stationary sources which share a common buffer

Advisor: Ravi Mazumdar

### **B.Sc in Mathematics, 1996**

#### **National and Capodistrian University of Athens, Mathematics Department**

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## RESEARCH INTERESTS

**Business Process Management and Service Value Networks:** Design, modeling and management of business processes and services in value networks. Analyze optimisation techniques to address the problem of optimising and transforming business processes. Identify Key Performance Indicators and quantitatively measure them. Analyze competing service networks applying game theoretic tools.

**Auction Theory:** Development of auction mechanisms to allocate bandwidth or multidimensional network contracts to end-users efficiently, satisfying the objective of incentive compatibility. Development of hierarchical auction formats to allocate network resources in multiple levels in the presence of intermediaries/retailers.

**Network Economics:** Study of pricing mechanisms applied to multiservice networks such that economical and engineering efficiency be balanced.

**Network Management:** Study of methods to improve a network's performance.

**Other:** Game Theory, Queuing Theory, Operational Research, Applied Probabilities, Stochastic Processes, Statistics.

## RESEARCH EXPERIENCE

- Feb. 2006 – Present: **Research assistant of Transformation Services Laboratory**, Computer Science Department, University of Crete.  
She participated in research projects (S-CUBE) funded by the EU in collaboration with the Research Committee of University of Crete.
  - Sep. 2001 – Nov. 2004: **Research assistant of Network Economics and Services Laboratory**, Athens University of Economics and Business. She participated in research projects (M3I, MMAPPS) funded by the EU in collaboration with the Research Committee of Athens University of Economics and Business.
  - Sep. 1998 – Sep. 2001: **Graduate research assistant**, Telecoms and Networks Laboratory, Institute of Computer Science, Foundation for Research & Technology (ICS-FORTH).
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## TEACHING EXPERIENCE

- Mar. 2011 – Present: Lecturer, Department of Applied Mathematics, University of Crete. Courses: **Applied Statistics**.
  - Sep. 2009 – Aug. 2010: Lecturer, Department of Applied Mathematics, University of Crete. Courses: **Calculus-Matlab, Applied Mathematics-Matlab**.
  - Sept. 2008 – Feb. 2009: Assistant Professor, Department of Computer Science, University of Crete. Courses: **Digital Economics and E-Commerce**.
  - Oct. 2005 – Aug. 2008: Lecturer, Department of Applied Mathematics, University of Crete. Courses: **Applied Statistics, Stochastic Processes I, Stochastic Processes II, Probabilities**.
  - Sep. 2004 – Present: Lecturer, Applied Informatics and Multimedia Department, School of Applied Technology, Technological Educational Institute of Crete. Courses: **Computer Networks, Introduction to Computer Science, Operations Research, Business Economics**.
  - Sep. 2003 – Present: Lecturer, Department of Sciences, School of Applied Technology, Technological Educational Institute of Crete. Courses: **Informatics, Programming, Introduction to Computer Science, Calculus I**.
  - Sep. 2000 – Sep. 2002 and Oct. 2010 - Present: Lecturer, Business Administration Department, School of Management and Economics, Technological Educational Institute of Crete. Course: **“Financial Mathematics”**.
  - Sept. 2004 – Apr. 2005: Lecturer, Accounting Department, School of Management and Economics, Technological Educational Institute of Crete. Course: **“Financial Mathematics”**.
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## FOREIGN LANGUAGES

- **English:** Excellent, Certificate of Proficiency in English, University of Cambridge, UK (1997).
- **German:** Fluent, Mittelstufe, University of Wuerzburg, Germany (1995).

## AWARDS AND SCHOLARSHIPS

- Graduate Scholarship, Institute of Computer Science, Foundation for Research and Technology, Greece (Oct. 1998 – Jan. 2002).
- Distinction in Master of Science in Mathematics in University of Essex, United Kingdom (1998).
- Undergraduate Scholarship for participating in Erasmus Programme in University of Wuerzburg in Germany, State Scholarship's Foundation, Greece (Mar. 1995-Aug. 1995).
- Third award in the students' contest "Euclid" by the Hellenic Mathematical Society (Dec. 1988).
- Prizes and Awards for achieving the best grade among my schoolmates in each year in High School and senior High School by the Ministry of Education (Sep. 1985- Jun. 1991).

## PUBLICATIONS

### Journals

- [1] M.Bitaki, C. Nikolaou, M.Voskakis, Willem-Jan van den Heuvel, K. Tsirikas: Performance Analysis and Strategic Interactions in Service Networks. Submitted in Journal On Advances in Networks and Services.
- [2] M. Bitsaki, M, Dramitinos: A Novel Approach for Allocating Network and IT Resources Offered by Different Service Providers. In International Journal of Distributed and Parallel Systems (IJDPS),Vol. 1-No. 2 (2010) 35-46.
- [3] N. Caswell, S. Feldman, C. Nikolaou, J. Sairamesh, M. Bitsaki, G. D. Koutras and G. Iacovidis: Estimating Value in Service Systems – A theory and an example. In IBM Systems Journal, 2008.
- [4] M. Bitsaki, G. D. Stamoulis, C. Courcoubetis: An Efficient Auction-Based Mechanism for Hierarchically Structured Bandwidth Markets. In Computer Communications 29(2006) 911 - 921.

### Conferences

- [5] M. Voskakis, C. Nikolaou, Willem-Jan van den Heuvel, M. Bitsaki: Service Network Modelling and Performance Analysis. In 6th International Conference on Internet and Web Applications and Services (ICIW 2011), St. Maarten, The Netherlands Antilles, 2011.

**(Best paper award)**

- [6] M. Bitsaki, O. Danylevych, Willem-Jan van den Heuvel, G. Koutras, F. Leymann, M. Manciacchi, C. Nikolaou, M. Papazoglou: An Architecture for Managing the Lifecycle of Business Goals for Partners in a Service Network. In Service Wave, Madrid, 2008.
- [7] M. Bitsaki, O. Danylevych, Willem-Jan van den Heuvel, G. Koutras, F. Leymann, M. Manciacchi, C. Nikolaou, M. Papazoglou: Model Transformations to Leverage Service Networks. In fourth International Workshop on Engineering Service-Oriented Applications: Analysis and Design (WESOA'08) Sydney, 2008.
- [8] Branimir Wetzstein, Olha Danylevych, Frank Leymann, Marina Bitsaki, Christos Nikolaou, Willem-Jan van den Heuvel, Mike Papazoglou: Towards Monitoring of Key Performance Indicators Across Partners in Service Networks. In Workshop on Monitoring, Adaptation and Beyond (MONA+), Madrid, 2008 .
- [9] C. Nikolaou, S. Tai, G. Iacovidis , M. Bitsaki, P. Mazzoleni, J. Sairamesh. "Estimating Value in Value Networks - A Case Study from Pharmaceutical Industry". Presented in the 16<sup>th</sup> Annual Frontiers in Service Conference, 2007.
- [10] M. Bitsaki, G. D. Stamoulis, C. Courcoubetis. "A New Strategy for Bidding in the Network-Wide Progressive Second Price Auction for Bandwidth". In Proc. of the 1<sup>st</sup> International Conference on Future Networking Technologies (CoNEXT'05), Toulouse, France, Oct. 2005.
- [11] M. Bitsaki, G. D. Stamoulis, C. Courcoubetis. "Auction –Based Bandwidth Trading in a Competitive Hierarchical Market". In Proc. of the 1<sup>st</sup> International Conference on Next Generation Internet Networks – Traffic Engineering (NGI '05), Rome, Italy, Apr. 2005.
- [12] M. Bitsaki, M. Dramitinos, G. D. Stamoulis, G. Antoniadis. "An e-Marketplace for Auctions and Negotiations in the Constructions Sector". In Proc. of the 12<sup>th</sup> International Conference on Cooperative Information Systems (CoopIS '04), pp 422-441, Cyprus, Oct. 2004.
- [13] M. Bitsaki, G. D. Stamoulis, C. Courcoubetis: An Efficient Auction Mechanism for Hierarchically Structured Bandwidth Markets. In Proc. of 5<sup>th</sup> International Workshop on Quality of future Internet Services (QofIS 2004), ICQT 2004 Workshop, pp. 308-317, Barcelona, Spain, 2004.
- (Best paper award)**

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## INVITED TALKS

1. M. Bitsaki, "Tutorial in Service Networks", Seminar, Institute of Architecture of Application Systems, University of Stuttgart, Germany, 10 July 2008
2. M. Bitsaki, C. Nikolaou, Value Network Analysis - Theory and Tools", 2<sup>st</sup> International Workshop and Summer School on Service Science, Engineering and Management, 2 June - 6 June 2008, Crete, Greece.
3. M. Bitsaki, "Estimating Value in Service Systems – Case Study of a Repair Service System", Seminar, Tilburg School of Economics and Management, Tilburg University, Netherlands, 15 April 2008.
4. M. Bitsaki, "Economic Aspects for Analyzing Value Networks", 1<sup>st</sup> International Workshop and Summer School on Service Science, Engineering and Management, 30 May-3 June 2007, Crete, Greece.