Dimitrios S. Milioris

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PERSONAL INFORMATION

Date of birth: September 22nd, 1986
Nationality and Citizenship: Greek

RESEARCH INTERESTS

Text & Sequence Analysis, Machine Learning, Dynamic Networks, Data Analytics, Operations Research, Signal Processing, Compressive Sensing, Mobile Computing, Sensor Networks, Indoor/Outdoor Localization

EDUCATION & POSITIONS

05/2017 –	Member of Technical Staff (MTS) Nokia Bell Labs, Team of Mathematics for Dynamic Networks
06/2015 – 04/2019	Researcher & Lecturer Massachusetts Institute of Technology (MIT) Computer Science/SCL (affiliated since April 2017)
04/2012 – 05/2015	Ph.D., Computer Science & Applied Mathematics École Polytechnique Paris (**Highest Honours**) Doctorate thesis' title: "Trend Detection and Information Propagation in Dynamic Social Networks". Alliance Award 2013–2014, Columbia University, NY, USA Supervisors: Philippe Jacquet (Professor, École Polytechnique Paris and Research Director, Bell Labs) & Paul Mühlethaler (Scientific Director, Hipercom, INRIA)
11/2011 – 03/2012	Sergeant Major Greek Army - Land Force, Greece 466 Telecommunications Division (1st office)
09/2010 – 09/2011	Master 2 Recherche, Nouveaux Systèmes Informatiques Université Paris XI & École Polytechnique. (**1st in class, Honours**) Supervisor: Philippe Jacquet (Professor, École Polytechnique ParisTech)
09/2009 – 09/2011	M.Sc. degree, Telecommunications, Networks and Distributed Systems University of Crete. (**1st in class, Honours**) Master thesis' title: "Low-dimensional Signal-Strength Fingerprint-based Positioning in Wireless LANs". Supervisor: Panagiotis Tsakalides (Professor, University of Crete) and Philippe Jacquet (Professor, École Polytechnique ParisTech)
09/2005 – 07/2009	B.Sc. degree in Computer Science, School of Sciences and Engineering, Department of Computer Science, University of Crete (**3rd in class, top 2%**) Diploma thesis' title: "Multiple-Measurement Bayesian Compressed Sensing using GSM Priors for DOA estimation". Supervisor: Panagiotis Tsakalides (Professor, University of Crete)

RESEARCH EXPERIENCE

05/2017 – **Member of Technical Staff (MTS)**
NOKIA BELL LABS
Research on string complexity analysis and deep learning techniques.

02/2016 – 10/2016 **Consultant**
SIGNAL MARITIME LTD
Research on vessel trajectory optimization along with data scraping and analysis.

06/2015 – 04/2019 **Researcher & Lecturer**
MASSACHUSETTS INSTITUTE OF TECHNOLOGY, MA, USA
Research on logistics/network distribution optimization along with health data analysis and prediction.
Research on mobility behavior trajectories.
Teaching "Quantitative Reasoning and Statistical Methods".

04/2012 – 05/2015 **PhD Student / Research Engineer**
ÉCOLE POLYTECHNIQUE & ALU BELL LABS FRANCE
Research on information propagation in dynamic social networks.

09/2013 – 12/2014 **Visiting Researcher / PhD Student**
COLUMBIA UNIVERSITY, NY & BELL LABS, MURRAY HILL, NJ, USA
Research on users' mobility & compressed classification in dynamic networks.

12/2010 – 05/2011 **Research Engineer**
I.N.R.I.A. - HIPERCOM TEAM
Research on location estimation and path tracking of a mobile user in indoor environments.

10/2009 – 09/2010 **Research Assistant**
FO.R.T.H. - I.C.S.
Research on location estimation for indoor environments.

12/2008 – 09/2009 **Research Assistant**
FO.R.T.H. - I.C.S.
Research on Wireless Sensor Networks for DOA estimation.

07/2008 – 09/2008 **Software Engineer**
École Centrale de Paris (ECP), Applied Mathematics Laboratory (MAS)
Design and implementation of a 3D Viewer for efficient reconstruction of buildings.
Supervisors, Prof. Paragios Nikolaos and Tziritas Georgios.

02/2008 – 06/2008 **Research Assistant**
FO.R.T.H. - I.C.S.
Research on Wireless Sensor Networks.

02/2006 – 05/2006 **Junior Programmer and Administrator**
Computerization Office, University of Crete
Designed and developed software for University's employees payment and administration of the network.

TEACHING EXPERIENCE

Massachusetts Institute of Technology

Spring 2016, "Quantitative Reasoning and Statistical Methods", Lecturer.

École Polytechnique ParisTech

Spring 2014 INF311 & INF431, "Algorithms", TA.
Spring 2013 INF311, "Data Structures and Algorithms", TA.

University of Crete

Spring 2010 CS-317, "Applied Stochastic Processes", TA.
Fall 2009 & 2010 CS-217, "Probability Theory I", TA.
Fall 2008 AM-091, "Introduction to Computer Science", TA.
Spring 2007 MATH-102, "Calculus I", TA.

STUDENTS

Fan Zhang (Grad, MIT; exchange CUHK, 2015–2017)
Stephanie O'Brien (Ugrad, MIT, 2016)
Kelly Hoffman, (Ugrad, MIT, 2016)

HONORS, AWARDS & ACHIEVEMENTS

06/2014 ***Awarded Paper***, Annual LINCS Symposium.

04/2014 ***3rd Prize***, Snow Data Challenge, WWW'14.

11/2013 ***Alliance Doctoral Mobility Grant***, Columbia University, New York, USA.

10/2013 ***Grand Prix de l'Innovation***, École Polytechnique & ParisTech, Doctoriales

05/2011 ***Best Poster Award*** *in ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc'11).*

10/2010 ***Best Paper Award Nomination*** *in ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM'10).*

09/2010 – 08/2011 *Scholarship by the Greek National Scholarships Foundation - (I.K.Y.).*

11/2009 – 08/2010 *Scholarship by the Greek Foundation for Research and Technology - (FO.R.T.H.).* Completed the necessary conditions for graduation in 3,5 years (4 years in normal). **Graduated 3rd** from the Computer Science Department.

12/2008 – 09/2009 *Scholarship by the Greek Foundation for Research and Technology - (FO.R.T.H.) for academic excellence.*

07/2008 – 09/2008 *Scholarship by the French Foundation Égide and École Centrale de Paris.*

02/2008 – 06/2008 *Scholarship by the Greek Foundation for Research and Technology - (FO.R.T.H.) for academic excellence.*

09/2005 *Award and Scholarship by the Greek National Scholarships Foundation - (I.K.Y.).* **3rd Prize**, Pan-hellenic entrance examinations, Computer Science Department.

TECHNICAL SKILLS

- Programming languages:
  - General: C, Java, Python, Assembly.
  - Scripting: HTML, PHP.
- Operating systems: Mac-OS, Linux, Windows.
- Applications: Matlab, LaTeX , MS Office, Open Office.

PUBLICATIONS

Book/Monograph:

D. Milioris, "Topic Detection and Classification in Social Networks", *Springer, October 2017,* **DOI***: 10.1007/978-3-319-66414-9,* **ISBN***: 978-3-319-66413-2.*

Refereed Conference and Journal Publications:

1. **D. Milioris**, "Document Clustering via Joint Complexity", *in ICCSS'19, Amsterdam, The Netherlands*, July 16-20, 2019.
2. **D. Milioris**, "Efficient Indoor Localization via Reinforcement Learning", *in IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP'19), Brighton, UK*, May 11-18, 2019.
3. P. Jacquet, **D. Milioris** and W. Szpankowski, "Joint String Complexity for Markov Sources: Small Data Matters", *submitted to IEEE Transactions on Information Theory*, 2018 (arXiv:1805.09025).
4. **D. Milioris**, "A Dynamic Completion Method for RSS Map Construction", *in International Zurich Seminar on Information and Communication (IZS'18)*, Feb 2018.
5. F. Zhang, F. Duarte, R. Ma, **D. Milioris**, H. Lin, C. Ratti, "Indoor Space Recognition using Deep Convolutional Neural Network: a case study at MIT Campus", *submitted to Plos ONE Journal*, October 2016 (arXiv:1610.02414).
6. **D. Milioris**, "Towards Dynamic Classification Completeness in Twitter", *in IEEE European Signal Processing Conference (EUSIPCO'16), Budapest, Hungary*, September 2016.
7. **D. Milioris** and D. Kondor, "Topic Detection Completeness in Twitter: Is it Possible?", *in International Conference on Computational Social Science (ICCSS'16), Chicago, IL, USA*, April 2016.
8. D. Kondor and **D. Milioris**, "Unsupervised Classification in Twitter based on Joint Complexity", *in International Conference on Computational Social Science (ICCSS'16), Chicago, IL, USA*, April 2016.
9. **D. Milioris**, "Classification Encryption via Compressed Permuted Measurement Matrices", *in IEEE International Workshop on Security and Privacy in Big Data (BigSecurity'16), INFOCOM'16, San Francisco, CA, USA*, April 2016.
10. **D. Milioris** and P. Jacquet, "Topic Detection and Compressed Classification in Twitter", *in IEEE European Signal Processing Conference (EUSIPCO'15), Nice, France*, September 2015.
11. **D. Milioris**, Milan Bradonjić and Paul Mühlethaler, "Building Complete Training Maps for Indoor Location Estimation", *in IEEE International Conference on Computer Communications (INFOCOM'15), Hong Kong, China*, Short Paper, April 2015.
12. **D. Milioris**, "Classification in Twitter via Compressive Sensing", *in IEEE International Conference on Computer Communications (INFOCOM'15), Hong Kong, China*, Short Paper, April 2015.
13. P. Jacquet and **D. Milioris**, "Information in Strings: Enumeration of Eulerian Paths and Eulerian Components in Markov Sequences", *in International Conference on Probabilistic, Combinatorial and Asymptotic Methods for the Analysis of Algorithms (AofA'14), Paris, France*, June 2014.
14. G. Burnside, **D. Milioris** and P. Jacquet, "One Day in Twitter: Topic Detection Via Joint Complexity", *in Snow Data Challenge, WWW'14, Seoul, South Korea*, April 2014.
15. **D. Milioris** and P. Jacquet, "SecLoc: Encryption System Based on Compressive Sensing Measurements for Location Estimation", *in IEEE International Conference on Computer Communications (INFOCOM'14), Toronto, Canada*, Short Paper, May 2014.
16. P. Mirowski, **D. Milioris**, P. Whiting and T. Kam Ho, "Probabilistic Radio-Frequency Fingerprinting and Localization on the Run", *in Bell Labs Technical Journal*, Vol. 18, No. 4, 2014 (doi: 10.1002/bltj.21649).
17. **D. Milioris** and P. Jacquet, "Joint Sequence Complexity Analysis: Application to Social Networks Information Flow", *in Bell Labs Technical Journal*, Vol. 18, No. 4, 2014 (doi: 10.1002/bltj.21647).
18. **D. Milioris**, G. Tzagkarakis, A. Papakonstantinou, M. Papadopouli and P. Tsakalides, "Low-dimensional Signal-Strength Fingerprint-based Positioning in Wireless LANs", *in Elsevier Ad Hoc Networks*, Vol. 12, pp. 100–114, January 2014.

19. P. Jacquet, **D. Milioris** and P. Mühlethaler, "A novel energy efficient broadcast leader election", *in IEEE 21st International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS'13), San Francisco, CA, USA*, August 2013.

20. **D. Milioris**, G. Tzagkarakis, P. Tsakalides and P. Jacquet, "WLAN-based Indoor Path-Tracking using Compressive RSS Measurements", *in 21st European Signal Processing Conference (EUSIPCO'13), Marrakech, Morocco*, September 2013.

21. P. Jacquet, **D. Milioris** and W. Szpankowski, "Classification of Markov Sources Through Joint String Complexity: Theory and Experiments", *in IEEE International Symposium on Information Theory (ISIT'13), Istanbul, Turkey*, July 2013.

22. **D. Milioris**, G. Tzagkarakis, P. Jacquet and P. Tsakalides, "Indoor Positioning in Wireless LANs using Compressive Sensing Signal-Strength Fingerprints", *in Proc. 19th European Signal Processing Conference (EUSIPCO'11), Barcelona, Spain*, August 2011.

23. **D. Milioris** and P. Jacquet, "A Statistical Region-based Compressive Sensing Indoor Path-Tracking System", *in Proc. 12th ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc'11), Paris, France*, Short Paper, May 2011. **Best Poster Award.**

24. **D. Milioris**, L. Kriara, A. Papakonstantinou, G. Tzagkarakis, P. Tsakalides and M. Papadopouli, "Empirical Evaluation of Signal-Strength Fingerprint Positioning in Wireless LANs", *in Proc. 13th ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM'10), Bodrum, Turkey*, October 2010. **Best Paper Award Nomination.**

25. G. Tzagkarakis, **D. Milioris** and P. Tsakalides, "Multiple-Measurement Bayesian Compressive Sensing using GSM Priors for DOA Estimation", *in Proc. 35th IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP'10), Dallas, TX, USA*, March 2010.

TECHNICAL REPORTS

1. **D. Milioris**, "Indoor Location Estimation via Deep Learning", *MIT*, Cambridge, MA, September 2017.

2. **D. Milioris**, "Towards Complete Topic Detection in Twitter", *MIT*, Cambridge, MA, December 2015.

3. **D. Milioris**, "Compressed Sensing Classification in Online Social Networks", *Columbia University*, New York, November 2014.

4. P. Jacquet and **D. Milioris**, "Stealth Encryption Based on Eulerian Circuits", *Alcatel-Lucent, Bell Laboratories*, February 2014.

5. **D. Milioris** and A. Traganitis, "Entropic Analysis of the Ancient and Modern Greek Language", *Foundation for Research and Technology Hellas (FORTH)*, September 2009.

PATENTS

1. **D. Milioris**, "Methods, Apparatus and computer-readable medium to realize localization (indoor/outdoor)", **EP 19150416.6**, Filed Jan 4, 2019

2. **D. Milioris**, "Methods, Apparatus and computer-readable medium to realize indoor localization", **20180100477**, Filed October 23, 2018

3. **D. Milioris**, "Architecture Adapted For Recognising A Category Of An Element From At Least One Image Of Said Element", **EP 17152333.5**, Filed January 20, 2017

4. **D. Milioris**, "Text Classification Based on Joint Complexity and Compressed Sensing", **US 14/540770**, Filed November 13, 2014 - **Published with No: US20160140409** - Pending Examination

5. P. Jacquet and **D. Milioris**, "HoneyPot Design via Random Eulerian Paths: Fake Information Based On N-Gram Randomizations", **EP 14306779.1**, Filed November 6, 2014 - **Published with No: EP3018647** - **Granted** on Jan 3, 2018

6. P. Jacquet, **D. Milioris** and G. Burnside, "Textual Steganography - Undetectable Encryption based on N-Gram Rotations", **EP 14306482.2**, Filed September 25, 2014 - **Published with No: EP3001402** - **Granted** on Apr 4, 2018

7. **D. Milioris**, "Method, User Equipment, System and Computer Readable Medium for Localizing a User Equipment", **EP 14306453.3**, Filed September 22, 2014 - **Published with No: EP2998760**

8. P. Jacquet and **D. Milioris**, "Undetectable Encryption based on M-grams Permutations", **EP 14305064.9**, Filed January 17, 2014 - **Published with No: EP2897320** - **Granted** on Oct 12, 2016

9. **D. Milioris** and P. Jacquet, "Method and Device for Classifying a Message", **EP 13306222.4**, Filed September 6, 2013 - **Published with No: EP2846499** - **Granted** on Jan 11, 2017

RESEARCH PROJECTS

- Project Manager, AirLiquide Project, $750K
- Project Manager, Scruff Project, $300K
- REVEAL Project (FP7, No 610928), €6M , €300K actual funding for Bell Labs
- CS-ORION Project (funded by European Commission, PIAP-GA-2009-251605) - while at ICS-FORTH
- ASPIRE Project (funded by European Commission, MTKD-CT-2005-029791) - while at ICS-FORTH

TPC

- IEEE ICC 2017, 2018
- IEEE INFOCOM 2017

REVIEWER

- IEEE Transactions on Signal Processing & Transactions on Mobile Computing
- IEEE International Symposium on Information Theory (ISIT)
- IEEE International Conference on Communications (ICC)
- IEEE Communications Letters
- Elsevier Computer Communications
- Elsevier Pervasive and Mobile Computing
- Bell Laboratories Technical Journal
- EURASIP European Signal Processing Conference (EUSIPCO)

FOREIGN LANGUAGES

- Greek: Native
- English: Certificate in English, Cambridge University
- French: Master 2 Recherche, Université Paris XI (Equiv. DALF C2)

SUMMER/WINTER SCHOOLS

- ResCom, Data Science, Porquerolles, 2018
- Cubrik, Social Networks, Rhodes, 2014
- ResCom, Network Science and Theory, Corse, 2014
- Doctoriales, École Polytechnique and ParisTech, Paris, 2013
- The Onassis Foundation Lecture Series, Network and Information Security, 2010

AFFILIATIONS & MEMBERSHIP

- MIT Club of Boston, France & Greece
- Columbia University Alumni Club of Greece
- IEEE Student Member (until Jan 2015), Member (since Feb 2015)

- Laboratory of Information, Networking and Communication Sciences (L.I.N.C.S.)
- Institut National de Recherche en Informatique et en Automatique (I.N.R.I.A.)
- Telecommunications & Networks Laboratory, I.C.S. - FO.R.T.H.

REFERENCES

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Professor Philippe Jacquet
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