

# PROMÉTHÉE SPATHIS

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## MAJOR ACADEMIC RESPONSIBILITIES

### Current position (since 2005)

- Associate Professor at Université Pierre et Marie Curie
  - Teaching: Faculté d'Ingénierie (UFR 919)
  - Research: Laboratoire d'Informatique de Paris 6 (UMR 7606)

### Education responsibilities (since 2005)

#### Higher Education (Faculté d'Ingénierie at Université Pierre et Marie Curie, UFR 919)

- Education coordinator for France in the framework of the EIT Digital European network.
- Programme director for the European Master programme in “Internet Technology and Architecture”.
- Coordinator for the Bachelor degree of Computer Science replicated in Vietnam in the framework of the Pôle Universitaire Français at Ho Chi Minh City.

#### Continuous Education (Service de la Formation Continue at Université Pierre et Marie Curie)

- Permanent expert for the “Back to Study & Experience Assessment” cell (REVA).
- Design and management of university degree programmes (IT and Multimedia).
- Chair of the programme and board committees for various graduate degree programmes.

### Research responsibilities (since 2005)

#### Laboratoire d'Informatique de Paris 6 (LIP6), UMR 7606

- Scientific responsible for research projects and industrial contracts.
- Co-advisor of Ph.D. students and graduate students.
- Member of conference programme committees and organizing committees, reviewer for national and international conferences.

## PROFESSIONAL EXPERIENCE

Year(s)	Position	University
01/15 - 06/15	Invited associate professor	New York University
depuis 09/05	Associate professor	Université Pierre et Marie Curie
09/03 - 08/04	Tenure-track lecturer and research assistant (part-time)	University Paris Nord
09/02 - 08/03	Tenure-track lecturer and research assistant (part-time)	Université Pierre et Marie Curie
09/99 - 08/02	Doctoral research fellow (French Government excellence scholarship)	Université Pierre et Marie Curie

## EDUCATION

Year	Degree
Dec. 2003	Ph.D. in Computer Science, Université Pierre et Marie Curie · Title: “Reliable Multicast: The Router-assisted Approach” · Speciality: “Computer Systems” · Department: Laboratoire d'Informatique de Paris 6 (UMR 7606) · Supervisor: Serge Fdida (Professor), co-advisor: Kim L. Thai (Associate professor) · Defense date: December 08, 2003 · Distinction: First Class Honours
Jun. 1999	M.Sc. in Computer Science · Major “Systems and Networks” · Université Pierre et Marie Curie
Jun. 1997	B.Sc. in Computer Science · Université Pierre et Marie Curie

## TEACHING ACTIVITIES

### Award

- Educational Investment Award · since 2010 (duration: 4 years)

### Teachings at Université Pierre et Marie Curie

#### Topics

Networking · Telecommunications · Operating systems · Programming languages · Database management systems

#### Continuous Education (since 1997)

University degree programmes in Science and Technologies (IT and Multimedia): Administrateur d'Outils Informatiques · Administrateur de Réseaux et Systèmes · Ingénierie de Réseaux et de Télécommunications · Technologies Objets et Internet · Administrateur de bases de données · Analyse des programmes · Chef de projet informatique en environnement territorial · Conception rigoureuse des systèmes Informatiques · Programmation de systèmes sûrs · Sûreté et Sécurité Logicielles

Teaching load: One course per degree programme, i.e. 20h lectures and 40h recitations, 2 to 3 programmes per year

#### Higher Education (depuis 2000)

M.Sc in Computer Science · Major: Computer Networking: Computer networks (ComNet) · Internet next generation (ING) · Core network technologies (ATMPLS) · Routing and routers (ROUT)

Teaching load: 20h lectures and 40h to 80h recitations per course and per year

B.Sc. in Computer Science: Network engineering · Introduction to networking · Computer Science

Teaching load: 20h lectures 40h to 80h recitations per year

#### Cooperation with other universities

##### New York University (Spring 2015)

- Responsible for two courses in Object oriented programming and Data structures and advanced algorithms.
- Supervisor for students' senior projects.

##### EIT Digital (since 2008)

- Design and development of the EIT Digital Master School in collaboration with 20 European universities in England, Germany, Spain, Finland, France, Hungary, Italy, and Sweden.
- Design and management of the EIT Digital European Master programme in "Internet Technology and Architecture" with 6 partner universities : TU Berlin, Germany · Universidad Politécnica de Madrid, Spain · Institut Mines-Télécom, France · University of Nice-Sophia Antipolis, France · University of Trento, Italy · KTH Royal Institute of Technology, Sweden.

##### Pôle Universitaire Français (since 2006)

- Delocation of the M.Sc. in Computer Networking of Université Pierre et Marie Curie in Vietnam (since 2006).
- Delocation and programme director of the B.Sc.in Computer Science (3rd year) of Université Pierre et Marie Curie in Vietnam (since 2009).

##### Université de la Réunion (depuis 2004)

- Creation of a cooperation agreement with Université de la Réunion in the framework of the M.Sc. in Computer Science, major in Information and Communication Technologies (ICT).

##### Institut Scientifique et Polytechnique Galilée (ISPG) of University Paris Nord (Paris 13) (in 2003)

- Design and responsibility of university programme courses: M.Sc. in Internet Application and Multimedia (AIM) · University degree programme in Telecommunications · DEUST 2 Installation and maintenance of enterprise networks.

## RESEARCH

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### Research Interests

Mobile networked systems, Large-scale data delivery systems

### Cooperations

#### European projects: Framework Programmes for Research and Technological Development

- MOTO (Nov. 2012 - Oct. 2015): Mobile Opportunistic Traffic Offloading · Budget: 605K euros.
- OneLab2 (Nov. 2011 - Nov. 2010): An open federated laboratory supporting network research for the future Internet · Budget: 6.3M euros.
- ANA (Jan. 2006 - Dec. 2009): Autonomic Network Architectures · IP-FET (Integrated Project - Future and Emerging Technologies) Proactive Initiatives project · Role: Responsible for UPMC · Budget: 5.53M euros.
- ACCA (Dec. 2004 - Jun. 2006): Autonomic Communication: Coordination Action) · Open FET Coordination Action · Budget: 500K euros.

#### European projects: European Institute of Innovation & Technology (EIT)

- EIT Health (since 2015) KIC Healthy living and active aging
- EIT Digital (since 2008) KIC Future information and communication society · Roles: Education Coordinator for France · Programme director for the Master programme in "Internet Technology and Architecture".

#### National projects: ANR (Agence Nationale de la Recherche) (since 2000)

- Project ANR DataTweet (since Oct. 2013, duration 36 months)
- Project ANR Rescue (Dec. 2010 - Jan. 2014).
- Project ANR Connect (Dec. 2010 - Jan. 2013) · Role: Responsible for UPMC
- Project RNRT AMARILLO (Dec. 2004 - Jun. 2005).
- CNRS Specific Action ASPRONET (Jan. 2002 - Dec. 2002).
- Project RNRT AMARRAGE (Apr. 2000 - Jun. 2002).

#### International projects: Scientific-technological cooperation program

- Project STIC Amsud MOSAIC (2014-216) Mobile Crowd Sensing and data Offloading in Collaborative Networks · Role: responsible for UPMC
- Project STIC Amsud CUDEN (2011-1013) Collaborative Centric User-Device Networking · Role: Project coordinator
- Project STIC Amsud SCAN (2009-2010) Self-Conscious Ambient Networks

### Industrial Collaborations

Toyota ITC (Ryuji Wakikawa) · Cisco (Joseph Clarke) · Thales Communications & Security (Vania Conan) · NEC Europe Ltd. (Stefan Schmid) · Telekom Austria Aktiengesellschaft (Igor Brusic)

### Academic Collaborations

Georgia Institute of Technology (Mostafa Ammar) · North Carolina State University (Yannis Viniotis) · INSA Lyon (Hervé Rivano) · Universidade Federal do Rio de Janeiro (Miguel Elias Mitre Campista and Luis Henrique Maciel Kosmowski Costa) · Grenoble INP (Andrzej Duda and Franck Rousseau) · Universitaet Basel (Christian Tschudin) · National and Kapodistrian University of Athens (Ioannis Stravakakis) · ETH Zürich (Martin Maye) · University of Lancaster (David Hutchison) · Université de Liège (Guy Leduc)

### Research Training & Supervision

#### Current Ph.D. students

- Salah-Eddine Belouanas: “Opportunistic Communications in Constrained Hybrid Environments” · Co-advised by Marcelo Dias de Amorim (CNRS Research Director) and Kim L. Thai (Associate Professor at UPMC).

#### Former Ph.D. students

- Benjamin Baron (Doctoral research fellow): “Offloading Massive Data on Mobile Nodes”, 2016 · Co-advised by Marcelo Dias de Amorim (CNRS Research Director).
- Raul A. Gorcitz: “From Small-scale Data Dissemination to Large Data Transfers in Vehicular Environments”, 2013 · Co-advised by Marcelo Dias de Amorim (CNRS Research Director).
- Mohamed Diallo (Doctoral research fellow): “A Framework for Scalable Global Content Dissemination”, 2013 · Co-advised by Serge Fdida (Professor at UPMC).
- Yosra Barouni: “CCR : une architecture de réseaux orientée contenu”, 2011 · Co-advised by Serge Fdida (Professor at UPMC) · Funded by IP-FET ANA project.

#### Other students advised (since 1999)

Université Pierre et Marie Curie: 15 Master theses; 2 engineering students at Institute de Sciences et Technologie (IST) · University Paris Nord: 2 undergraduate students · University of Technology of Troyes: 1 graduate student · École Nationale Supérieure de Techniques Avancées (ENSTA): 1 engineering student.

### Research Management Activities

#### Conference organization and program committee

- TPC co-chair for ResCom summer school, *Les réseaux centrés sur les contenus: évolution ou révolution de l'Internet*, Porquerolles, France, May 13-17, 2013.

#### Selection Committees

- Faculty Advisory Committee on Appointments and Advancements for Assistant Professors at Université Pierre et Marie Curie, from 2013 to 2015.
- Faculty Advisory Committee on Appointments and Advancements for Assistant Professors at University of la Réunion, since 2009.

#### Expertise and Evaluation

- Research programmes Verso and “Jeunes Chercheuses et Jeunes Chercheurs” for the Agence Nationale de la Recherche (ANR).
- Selection committee for the DAAD (German Academic Exchange Service).
- Admission committee for the IGR competition of Université Pierre et Marie Curie.
- External expert for DIGITEO-DigiCosme call for proposal.

#### Conference and Journal Reviews

Eunice Open European Summer School and Conference · IFIP/IEEE International Symposium on Integrated Network Management (IM) · IEEE International Conference on Computer Communications (INFOCOM) · Colloque francophone sur l'ingénierie des protocoles (CFIP) · IEEE Symposium on Computers and Communications (ISCC) · Quality of future Internet Services (QoFIS) · IEEE Local Computer Networks (LCN) · Springer Annals of Telecommunications · Technique et science informatiques (TSI) · Computer Communications Journal · International Conference on Natural Language Processing (ICON) · IEEE Global Communications Conference (GLOBECOM) · Internet Performance Symposium (IPS) · ACM Interactive Distributed Multimedia Systems (IDMS) · IEEE/IFIP International Workshop on Quality of Service (IWQoS)

## PRESENTATIONS & OUTREACH

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### Invited Presentations

- “Large-Scale Networked Systems”, *PhD course, University of Trento*, Jul. 2015, Trento, Italy.
- “Content Centric Networking Tutorial”, Tutorial, *10e édition du colloque francophone sur la Gestion de Réseaux et de Services (GRES 2014)*, Dec. 2014, Paris, France.
- “Software-Defined Vehicular Backhaul”, *Workshop On Mobile Crowd Sensing and data Offloading in Collaborative Networks*, Oct. 2014, Asuncion, Paraguay.
- “Can Vehicular Networks Save the Internet from the Data Tsunami?”, Keynote, *12th International Conference on Wired & Wireless Internet Communications (WWIC'2014)*, May 2014, Paris, France.
- “YouTube's 2 GB of Fame: Will Everyone Eventually Get World-Famous for 10 minutes?”, Invited speaker, *The 6th Asian Internet Engineering Conference (AINTEC2010)*, Nov. 2010, Bangkok, Thailand.

## Interviews and Media Articles

- Gaëlle Ginibrière (Le Figaro) · Aurélie Djavadi (Challenges) · Jean-Claude Levandowski (Les Echos) · Véronique Arène (Le Monde Informatique) · Catherine Buyck (AEF)
- “Les nouvelles technologies en pointe”, *Le Figaro*, April 02, 2012.
- HTV9 news broadcast (Vietnam), July 26, 2007.
- “Thac si CNTT theo chuan chau au”, *The Gioi Vi Tinh (PC World Vietnam)*, May 2007.

## Popularization of Science

- “3<sup>e</sup> cycles et Masters: où, quand, comment ?”, *Student and Training Fair Conference*, Feb. 2013, Paris, France.
- “Internet et les autoroutes de l’information : des principes à la pratique”, *Scientific Conference for “Université Dans la Cité*”, Apr. 2004, Paris, France.

## PUBLICATIONS

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### Journals and Magazines

- [1] Benjamin Baron, Miguel Campista, Prométhée Spathis, Luís Henrique M. K. Costa, Marcelo Dias De Amorim, Otto Carlos M. B. Duarte, Guy Pujolle, and Yannis Viniotis. “Virtualizing vehicular node resources: Feasibility study of virtual machine migration”. In: *Vehicular Communications* (Apr. 2016).
- [2] Benjamin Baron, Prométhée Spathis, Hervé Rivano, and Marcelo Dias De Amorim. “Offloading Massive Data onto Passenger Vehicles: Topology Simplification and Traffic Assignment”. In: *IEEE/ACM Transactions on Networking* (Dec. 2015).
- [3] Mohamed Diallo, Serge Fdida, and Prométhée Spathis. “Towards Extreme Scale Content-Based Networking for the Next Generation Internet”. In: *IEICE Transactions on Communications* 94-B.10 (2011), pp. 2706–2714.
- [4] Prométhée Spathis and Kim Loan Thai. “Multicast fiable : l’approche à soutien des routeurs”. In: *Technique et Science Informatiques* 23.5-6 (2004), pp. 733–761.

### Book Chapters

- [1] Prométhée Spathis and Marco Bicudo. “ANA: Autonomic Network Architecture”. In: *Autonomic Network Management Principles: From Concepts to Applications*. Academic Press, 2010, pp. 49–65.
- [2] Prométhée Spathis and Kim Loan Thai. “Router-assist Based Reliable Multicast”. In: *Multimedia Multicast on the Internet*. Wiley-ISTE, 2007.
- [3] Prométhée Spathis and Kim Loan Thai. “Multicast fiable : l’approche à soutien des routeurs”. In: *Technique et Science Informatiques* 23.5-6 (2004), pp. 733–761.

### International Conferences

- [1] Benjamin Baron, Prométhée Spathis, Marcelo Dias De Amorim, and Mostafa Ammar. “Cloud Storage for Mobile Users Using Pre-Positioned Storage Facilities”. In: *ACM SMARTOBJECTS’16*. New York, United States, Oct. 2016.
- [2] Salah Eddine Belouanas, Kim-Loan Thai, Prométhée Spathis, and Marcelo Dias De Amorim. “SCoD: Saving Cellular Resources by Delaying Transmissions of Popular Content”. In: *IEEE 12th International Symposium on Wireless Communication Systems*. Brussels, Belgium, Aug. 2015.
- [3] Prométhée Spathis, Salah Eddine Belouanas, and Kim-Loan Thai. “Leveraging Replication in Content-Centric Networks”. In: *Global Information Infrastructure and Networking Symposium*. Guadalajara, Mexico, Oct. 2015.
- [4] Benjamin Baron, Prométhée Spathis, Hervé Rivano, and Marcelo Dias De Amorim. “Vehicles as Big Data Carriers: Road Map Space Reduction and Efficient Data Assignment”. In: *VTC2014-Fall - IEEE 80th Vehicular Technology Conference*. Vancouver, Canada: IEEE, Sept. 2014, pp. 1–5.
- [5] Benjamin Baron, Prométhée Spathis, Hervé Rivano, Marcelo Dias De Amorim, Yannis Viniotis, and Joseph Clarke. “Software-Defined Vehicular Backhaul”. In: *Wireless Days 2014*. IEEE and IFIP. Rio de Janeiro, Brazil: IEEE, Nov. 2014, pp. 1–6.
- [6] Salah Eddine Belouanas, Thai Kim-Loan, Prométhée Spathis, Prométhée Spathis, Marcelo Dias De Amorim, Franck Rousseau, and Andrzej Duda. “Content Centricity in Constrained Cellular-Assisted D2D Communications”. In: *Ad Hoc Networks*. Rhodes, Greece, Aug. 2014.
- [7] Prométhée Spathis and Thomas Silverston. “Enabling Content Replication in Content-Centric Networks”. In: *CCNx Conference*. Palo Alto, CA, United States, Sept. 2013.
- [8] Raul Adrian Gorcitz, Yesid Jarma, Prométhée Spathis, Marcelo Dias De Amorim, Ryuji Wakikawa, John Whitbeck, Vania Conan, and Serge Fdida. “Vehicular Carriers for Big Data Transfers”. In: *2012 IEEE Vehicular Networking Conference (VNC 2012)*. Seoul, Korea, Nov. 2012, pp. 109–114.
- [9] Raul Adrian Gorcitz, Prométhée Spathis, Ryuji Wakikawa, and Serge Fdida. “Dissecting dissemination in VANETs”. In: *AINTEC’12 - ACM Asian Internet Engineering Conference*. Ed. by Kanchana Kanchanasut, Sukumal Kitisin, Keith W. Ross, Marcelo Dias de Amorim, and Rodney Van Meter. Bangkok, Thailand: ACM, Nov. 2012, pp. 62–68.
- [10] Serge Fdida, Prométhée Spathis, and Marcelo Dias De Amorim. “Massive Data Migration on Wheels”. In: *IFIP/IEEE WONS (WONS)*. Bardonecchia, Italy: IEEE, Jan. 2011, pp. 17–18.

- [11] Raul Adrian Gorcitz, Prométhée Spathis, Marcelo Dias de Amorim, Ryuji Wakikawa, and Serge Fdida. "SERVUS: Reliable low-cost and disconnection-aware broadcasting in VANETs". In: *IWCMC 2011 - 7th International Wireless Communications & Mobile Computing Conference*. Istanbul, Turkey: IEEE, July 2011, pp. 1760–1765.
- [12] Prométhée Spathis and Raul Adrian Gorcitz. "A Data-driven Analysis of YouTube Community Features". In: *The 7th Asian Internet Engineering Conference, AINTEC '11*. Bangkok, Thailand: ACM, Nov. 2011, pp. 12–18.
- [13] Prométhée Spathis and Raul Adrian Gorcitz. "A Data-driven Analysis of YouTube Community Features". In: *ACM Asian Internet Engineering Conference (AINTEC 2011)*. Bangkok, Thailand, 2011.
- [14] Yosra Barouni, Marco Bicudo, and Prométhée Spathis. "Content Centric Routing for Future Generation Networks". In: *Infocom Student Workshop*. Rio de Janeiro, Brazil: IEEE, Apr. 2009, pp. 1–2.
- [15] Yosra Barouni and Prométhée Spathis. "Magnet: A Content Centric Routing Protocol for Large Scale Networks". In: *The 4th International Conference on Future Internet Technologies, CFI '09*. Seoul, South Korea: ACM, June 2009, pp. 28–31.
- [16] Yosra Barouni and Prométhée Spathis. "Content centric routing for the autonomic networks". In: *Autonomics'08*. Turin, Italy: ICST, Sept. 2008.
- [17] Prométhée Spathis and Kim Loan Thai. "MAF: A Reliable Multicast Transport Protocol". In: *International Conference on Telecommunications (ICT'2003)*. Papeete, French Polynesia, 2003, p. 7.
- [18] Rim Hammi, Prométhée Spathis, Dany Zebiane, Ken Chen, Kim Loan Thai, and Ahmed Serhrouchni. "Deployment and experimentation of an active network at a large scale: AMARRAGE". In: *IEEE/IFIP Network Control and Engineering for QoS, Security and Mobility (NETCON'02)*. Paris, France, 2002, p. 13.

### National Conferences

- [1] Benjamin Baron, Prométhée Spathis, Hervé Rivano, and Marcelo Dias De Amorim. "Étude de l'intermodalité pour le délestage des réseaux d'infrastructure". In: *ALGOTEL 2015 - 17èmes Rencontres Francophones sur les Aspects Algorithmiques des Télécommunications*. Beaune, France, June 2015.
- [2] Benjamin Baron, Prométhée Spathis, and Marcelo Dias De Amorim. "Leveraging on Electric Vehicles for Big Data Transfers". In: *Journées Nationales des Communications dans les Transports JNCT 2013*. Poster. Nevers, France, May 2013.
- [3] Yosra Barouni, Prométhée Spathis, and Serge Fdida. "Algorithme distribué de filtrage et de routage orienté contenu". In: *10ème Rencontres Francophones sur les Aspects Algorithmiques des Télécommunications (AlgoTel'08)*. Ed. by David Simplot-Ryl and Sebastien Tixeuil. Saint-Malo, France, 2008, pp. 25–28.
- [4] Yosra Barouni, Prométhée Spathis, and Serge Fdida. "Modèle générique pour le routage orienté contenu". In: *Colloque Francophone sur l'Ingénierie des Protocoles (CFIP 2008)*. Poster. Mar. 2008.
- [5] Mohamed Diallo, Prométhée Spathis, and Serge Fdida. "Challenges on Internet-scale content-based communications". In: *Ecole d'été RESCOM 2008*. Saint-Jean-Cap-Ferrat, France, June 2008.
- [6] Marie-Pierre Gervais, Mahmoud Elias, Prométhée Spathis, and Kim Loan Thai. "Composition de spécifications de services actifs". In: *Colloque francophone sur la gestion de réseau et de service (GRES '03)*. Fortaleza, Brazil, 2003.
- [7] Salim Bouzitouna, Mahmoud Elias, Prométhée Spathis, Marie-Pierre Gervais, and Kim Loan Thai. "Création de services actifs dans ANTS". In: *Colloque francophone sur la gestion de réseau et de service (GRES '02)*. Marrakech, Morocco, 2002.
- [8] Prométhée Spathis, Rim Hammi, Dany Zebiane, Kim Loan Thai, Ken Chen, and Ahmed Serhrouchni. "AMARRAGEbone : Déploiement et expérimentation d'un réseau actif à grande échelle". In: *Colloque Francophone sur l'Ingénierie des Protocoles (CFIP 2002)*. Montréal, Canada, 2002, p. 15.
- [9] Prométhée Spathis and Kim Loan Thai. "MAF : un protocole de multicast fiable". In: *Colloque Francophone sur l'Ingénierie des Protocoles (CFIP 2002)*. Montréal, Canada, 2002, p. 13.
- [10] Prométhée Spathis and Kim Loan Thai. "Multicast Actif Fiable". In: *Journées Doctorales en Informatique et Réseaux (JDIR 2002)*. Toulouse, France, 2002, p. 10.