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Consultant, Researcher and Executive in Digital Transformation

Personal Statement

I am an experienced **Consultant** and a passionate **Researcher** in digital transformation, computer science and new immersive media having worked for **12 years in academia and industry**. I have coordinated research projects on distributed computing, managed industrial development teams and served as CTO in two startups building innovative products around the Internet of Things and Virtual Reality. **Creative, Rigorous and Collaborative**, I like to take up research and industrial challenges linked to digital transformation by providing my technical expertise, my innovative spirit, my management abilities as well as my willingness to build useful applied research outcomes serving science, business and society.

Professional Experience

Since June 2016 — **CTO - BlumenLab SAS** (Startup - France)
Duties: Research and Development of an innovative product for publishing and broadcasting immersive content for the cultural and training sectors.
Customers: SNCF, RATP, CMN, CNC, ENEDIS.

Since Dec 2015 — **Invited Researcher at TSP** (School of Engineering- France)
Research: Ubiquitous Internet, Mobile Networks, IoT, Cybersecurity.
Duties: Research Projects submission (EU H2020), Student supervision.

Jan 2018 - Jan 2020 — **CTO - KB DIGITAL AG** (Startup - Switzerland)
Duties: Research coordinator and Development team leader promoting two innovative products for industrial IoT verticals.
Customers: Hager, Merck, Legrand, Derichebourg, Alcatel-Enterprise.

Jan 2015 - Dec 2017 — **Consultant and Instructor - Bourgeau Consulting** (Freelancer - France)
Services: Specialized consulting in the field of Networks, Communicating Objects and Cybersecurity. **Seminars and Lectures** on IP Networks, Web Development and the Internet of Things.
Customers: Renault, ORSYS, ATOS.

Sep 2009 - Sep 2014 — **Doctoral Student at UPMC** - (University - France)
Subject: Internet paths mapping at the IP-Level.
Results: Design of a distributed measurement system (TopHat) and an enhanced algorithm for observed dynamics prediction (OpenLab Project).

Jan 2007 - Sep 2009 — **Research Engineer - UPMC** (University - France)
Duties: European project coordinator (OneLab - 10 partners), Administrator and maintainer of the PlanetLab Europe network experimental facility.

Jan 2006 - Dec 2006 — **Junior Engineer - Sogeti High Tech** (Consulting company - France)
Duties: Specification and validation of on-board modules (ABS and Airbag) using the CAN communication protocol.

Expertise

Management:	**Projet Management** (Specifications, Coordination, Planning, Validation, Delivery), **Methods** (V-Model, Agile Model, Design Thinking).
Technology:	**Networks** (Internet, Cellular, Cybersecurity), **Architecture** (Cloud, Edge, Embeded), **Hardware** (Design and Prototype), **Machine Learning** (TensorFlow).
Computer Science:	**Languages** (Python, C/C++, Bash, Java), **Web** (PHP, Javascript, MySQL), **Tools** (MS Office, Jira), **DevOps** (Kubernetes, Docker, Git).
Languages:	**French** (Native), **English** (Oral/written fluency) and **German** (B1 Level)
Soft Skills:	Creative, Persistant, Collaborative and Rigorous.

Education & Qualifications

2013	**Doctorate in Computer Science** - University Pierre et Marie Curie (UPMC - Paris) Specialty area: Network Communication and Algorithmics Subject: Internet paths mapping at the IP-Level.
2005	**Master of Science in Computer Science** - (UPMC - Paris) Major: Network and Telecommunication
2003	**Bachelor of Science** - (UPMC - Paris) Major: Computer Science and Electronics

Industrial & Research Projects

2019 - 2020:	**Trans4Mation (EU-Erasmus+)** Knowledge Aliance for the Industry 4.0. **Rôle:** Development of new immersive learning methods with virtual reality.
2015 - 2016:	**Access Story (Renault-Atos):** Migration of Renault services to the Azure cloud. **Role:** Cybersecurity expert responsible for the architecture and deployment.
2012 - 2013:	**EINS (FP7-ICT):** Network of Excellence of Internet Science. **Role:** Participation in the working group on the analysis of social networks and their impact on decision-making and cognitive biases.
2007 - 2011:	**OpenLab - OneLab (EU-FP7):** Experimental network facility **Role:** Project coordinator (OneLab, 2 years, 10 partners), Engineer and Researcher leading the distributed measurement work packages.

Teaching Experience

Since 2016 :	**Lecturer at ESCP Europe (210h)** (Business School - France) **Business Networks & Security** (En - 120h) , **Digital Insights : algorithmics and programming** (En - 90h)
Since 2015 :	**Independent Instructor (660h) - ORSYS** (Training Company - France) **Internet of Things: An Overview** (Fr/En - 350h) , **Wireless Network Technology** (Fr/En - 205h) , **IP Services and Protocols** (Fr - 105h)
2015 - 2017 :	**Lecturer at TSP (141h)** (Engineering School - France) **Innovation and entrepreneurship** (Fr, Master, 63h), **Initiation to research** (En, MSc, 36h), **Wireless network technologies** (Fr - Bachelor - 42h)
2009 - 2014 :	**Lecturer at UPMC (428h)** (University - France) **Network Architectures** (Fr/En, Master, 239h), **Web technology** (Fr, Bachelor, 115h), **Network Security** (Fr, Bachelor, 74h)

Publications

My research efforts are focused on pushing forward science and technologies on cutting edge area such as next generation networks, Internet of Things, digital education, virtual and augmented reality. I have published 11 papers in international conferences as well as 7 articles in journals and 3 book chapters.

Journaux

[1] Yannick Fourastier, Claude Baron, Chouchi Hakima, Carsten Thomas, Thomas Bourgeau, Jean-Paul Smet, Viktor Yehorov, and Philippe Esteban. *AI-assisted distributed applications at Edge for industrial field autonomous systems*. Sensors & Transducers, IFSA Publishing, 2021.

[2] Hakima Chaouchi and Thomas Bourgeau. *Will all jobs require programming skills in the growing digital society?* ITU Journal, 2020.

[3] Hakima Chaouchi and Thomas Bourgeau. *Internet of Things: Building the New Digital Society*. Ed. by IOT Journal. MDPI - open access journal, 2018.

[4] Giovanni Giambene, Van Anh Le, Thomas Bourgeau, and Hakima Chaouchi. *Iterative Multi-level Soft Frequency Reuse with Load Balancing for Heterogeneous LTE-A Systems*. IEEE Transactions on Wireless Communications, 2016.

[5] Thomas Bourgeau, Hakima Chaouchi, and Pinar KIRCI. *Machine-to-machine communications*. Computer Communications and Networks, Springer, 2013, pp. 221–241.

[6] Xavier Carcelle and Thomas Bourgeau. *Technologies CPL Indoor*. Ed. Techniques de l'Ingénieur, 2010.

[7] Xavier Carcelle and Thomas Bourgeau. *Technologies CPL*. Ed. Techniques de l'Ingénieur, 2010.

Chapître de Livres

[8] Xavier Carcelle and Thomas Bourgeau. "The Internet of Things: Connecting Objects". In: Ed. John Willey and Sons, 2013. Chap. Power Line Communication Technology Overview.

[9] Thomas Bourgeau, Hakima Chaouchi, and Pinar Kirci. "Wireless Technologies: 3G and Beyond". In: Springer, 2013. Chap. Machine to Machine communications.

[10] Hakima Chaouchi and Thomas Bourgeau. "Wireless Technologies: 3G and Beyond". In: Springer, 2013. Chap. Internet of Things: From real to virtual world.

Articles

[11] Nahit Pawar, Thomas Bourgeau, and Hakima Chaouchi. "Study of IoT Architecture and Application Invariant Functionalities". In: *NOMS Network Operations and Management Symposium*. Ed. by IEEE/IFIP. 2021.

[12] Nahit Pawar, Thomas Bourgeau, and Hakima Chaouchi. "Power Gating and Its Application in Wake-Up Radio." In: *EWSN, pp. 218-223*. 2020.

[13] Nahit Pawar, Thomas Bourgeau, and Hakima Chaouchi. "Low-cost, Low-power Testbed for Establishing Network of LoRaWAN Nodes". In: *Proceedings of the 2020 International Conference on Embedded Wireless Systems and Networks on Proceedings of the 2020 International Conference on Embedded Wireless Systems and Networks*. 2020, pp. 192–194.

[14] Nahit Pawar, Thomas Bourgeau, and Hakima Chaouchi. "R-Bus: A Resource Bus for Modular System Design". In: *Proceedings of the 10th International Conference on the Internet of Things*. IoT '20. ACM Association for Computing Machinery, 2020.

[15] Nahit Pawar, Thomas Bourgeau, and Hakima Chaouchi. "PrIoT: Prototyping the Internet of Things". In: *2018 IEEE 6th International Conference on Future Internet of Things and Cloud (FiCloud)*. Ed. by IEEE. 2018, pp. 216–223.

[16] Jacques Bou Abdo, Thomas Bourgeau, Jacques Demerjian, and Hakima Chaouchi. "Extended Privacy in Crowdsourced Location-Based Services Using Mobile Cloud Computing". In: *Mobile Information Systems*. Vol. 2016. Hindawi Publishing Corporation, 2016.

[17] Giovanni Giambene, Van Anh Le, Thomas Bourgeau, and Hakima Chaouchi. "Soft Frequency Reuse Schemes for Heterogeneous LTE Systems". In: *International Conference on Communcations (ICC)*. IEEE, 2015.

[18] Thomas Bourgeau and Timur Friedman. "Efficient IP-level Network Topology Capture". In: *Passive and Active Measurement conference (PAM)*. Vol. 7799. Springer, 2013, pp. 11–20.

[19] Thomas Bourgeau and Timur Friedman. "Toward fast and efficient IP-level network topology capture". In: *ACM CoNEXT student workshop*. CoNEXT Student '12. ACM, 2012, pp. 5–6.

[20] Thomas Bourgeau. "Monitoring network topology dynamism of large-scale traceroute-based measurements". In: *Network and Service Management (CNSM)*. IEEE, 2011, pp. 1–5.

[21] Thomas Bourgeau, Jordan Augé, and Timur Friedman. "TopHat: Supporting Experiments through Measurement Infrastructure Federation". In: *ICST TRIDENTCOM*. Vol. 46. Springer, 2011, pp. 542–557.

[22] Thomas Bourgeau and Timur Friedman. "True link detection in presence of PPLB". In: *Algotel*. 2009.