

## ALLEGATO B

UNIVERSITÀ DEGLI STUDI DI MILANO

selezione pubblica per n.\_5\_ posto/i di Ricercatore a tempo determinato ai sensi dell'art.24, comma 3, lettera a) della Legge 240/2010 nell'ambito del Piano Nazionale di Ripresa e Resilienza (PNRR), per il settore concorsuale \_01/B1-INFORMATICA\_, settore scientifico-disciplinare \_INF/01-INFORMATICA\_ presso il Dipartimento di \_Informatica Giovanni degli Antoni\_ (avviso bando pubblicato sulla G.U. n. \_1\_ del \_03/01/2023\_) Codice concorso \_5174\_

## [Fatme Hachem] CURRICULUM VITAE

(N.B. IL CURRICULUM NON DEVE ECCEDERE LE 30 PAGINE E DEVE CONTENERE GLI ELEMENTI CHE IL CANDIDATO RITIENE UTILI AI FINI DELLA VALUTAZIONE.

LE VOCI INSERITE NEL FACSIMILE SONO A TITOLO PURAMENTE ESEMPLIFICATIVO E POSSONO ESSERE SOSTITUITE, MODIFICATE O INTEGRATE)

### INFORMAZIONI PERSONALI (NON INSERIRE INDIRIZZO PRIVATO E TELEFONO FISSO O CELLULARE)

COGNOME	HACHEM
NOME	FATME
DATA DI NASCITA	[13, 01, 1989]

### TITOLI

#### TITOLO DI STUDIO

(indicare la Laurea conseguita inserendo titolo, Ateneo, data di conseguimento, ecc.)

**Ph.D. in Computer Science**

**01/2015 - 02/2018**

**Università degli Studi di Milano-Dipartimento di Informatica " Giovanni degli Antoni "**

*Thesis: Segmentation techniques based on clustering for the analysis of mobility data.*

*The Thesis focuses on segmentation methods for the partitioning of spatial trajectories in semantically meaningful sub-trajectories and their application to the analysis of mobility behavior.*

**Supervisor: Prof. Maria Luisa Damiani**

**M.Sc. Telecommunication Networks**

**10/2011- 09/2012**

**Saint-Joseph University-ESIB, Lebanon & Thesis project: LISV- Saint-Quentin University, Versailles, France.**

*Thesis: Modelling and Analysis of PHY & MAC layers' Performance for a new optical communication vector in free space.*

*The thesis studies the possibility of using the visible light for communication in a vehicular environment.*

**Master's degree in Computer and Communication Engineering**

**10 / 2006 - 07 / 2011**

**Lebanese University- Faculty of Engineering, Lebanon**

*Thesis: Server-Clients system for Location Based Services LBS*

*The thesis project presents an android mobile application in LBS domain. The application is to provide information to the visitors of Beirut National Museum based to their locations inside of it.*

**TITOLO DI DOTTORE DI RICERCA O EQUIVALENTI, OVVERO, PER I SETTORI INTERESSATI, DEL DIPLOMA DI SPECIALIZZAZIONE MEDICA O EQUIVALENTE, CONSEGUITO IN ITALIA O ALL'ESTERO**  
(inserire titolo, ente, data di conseguimento, ecc.)

**Ph.D. in Computer Science**

**01/2015 - 02/2018**

**Università degli Studi di Milano-Dipartimento di Informatica " Giovanni degli Antoni "**

*Thesis: Segmentation techniques based on clustering for the analysis of mobility data.*

*The Thesis focuses on segmentation methods for the partitioning of spatial trajectories in semantically meaningful sub-trajectories and their application to the analysis of mobility behavior.*

**Supervisor: Prof. Maria Luisa Damiani**

**CONTRATTI DI RICERCA, ASSEGNI DI RICERCA O EQUIVALENTI**

(per ciascun contratto stipulato, inserire università/ente, data di inizio e fine, ecc.)

**Post-doctoral Researcher**

**University of Milan**

**Project: Next-generation Ultra-wideband Localization and Communication for the Internet of Things (NG-UWB). Funded by: MIUR\_PRIN 2017.**

**Supervisor: Prof. Maria Luisa Damiani**

-Assegno di ricerca tipo A (01/08/2021 - present)

-Assegno di ricerca tipo B (01/10/2020 - 31/07/2021)

-Assegno di ricerca tipo B (01/10/2019 - 30/09/2020)

**Post-doctoral Researcher**

**University of Milan**

**Project: Snap4City, Smart aNalytic APp builder for sentient Cities and IOT.**

**Funded by: The European Union Horizon 2020 research and innovation program.**

**Supervisor: Prof. Marco Mesiti**

-Assegno di ricerca tipo B (01/08/2018 - 30/09/2019)

**ATTIVITÀ DIDATTICA A LIVELLO UNIVERSITARIO IN ITALIA O ALL'ESTERO**

(inserire anno accademico, ateneo, corso laurea, numero ore, ecc.)

▪Assistant lecturer of the Bachelor course: "Informatica generale", in the Faculty of Computer Science, University of Milan, 2021.

▪Assistant lecturer of the Masters course: "Geo-spatial information management", in the Faculty of Computer Science, University of Milan, 2020

▪Assistant Lab instructor for the course: "GO Language programming", in the faculty of Computer Science, University of Milan, 2018.

▪Assistant lecturer of the Masters course: "Geo-spatial information management", in the Faculty of Computer Science, University of Milan, 2016.

▪Assistant Lab instructor for the course: "Sistemi Informativi Territoriali" (Territorial Information Systems), in the faculty of "Bene Culturali e ambientali", Univerity of Milan, 2016.

▪Co-supervision of many master theses since 2017.

▪Assistant in student projects supervision for the course "Web programming", in the faculty of Computer Science, University of Milan, 2019.

## DOCUMENTATA ATTIVITÀ DI FORMAZIONE O DI RICERCA PRESSO QUALIFICATI ISTITUTI ITALIANI O STRANIERI;

(inserire anno accademico, ente, corso, periodo, ecc.)

- Attending the Data Science Summer School held in Pisa, Italy, on September 2019.
- Attending the Reasoning Web Summer School, held in Bolzano, Italy, on September 2019.
- Participant at the IEEE International Conference on Data Mining (ICDM), November 2017, New Orleans, USA
- Attending the series of lectures “A Multidisciplinary Perspective on Big Data”, in politecnico di Milano, 2017. The knowledge gained during the lectures is applied in project “Player’s best positions discovery in soccer games”. It takes advantage of the big data by applying machine learning on a model in order to output the most suitable position for a player, given its set of physical characteristics. This project is awarded with a full grade.
- Attending the 12th EDBT Summer School about “Graph Data Management” held in Palamós, Catalunya from the 31st of August to the 4th of September 2015.
- Attending the Developers’ boot camp organized by Forum Nokia and Nokia Levant: A detailed training on creating Qt applications for mobile devices, Beirut 2011.
- Cisco: CCNA 1,2,3 & 4 (courses taken and exams passed in the Lebanese University- Faculty of Engineering- Beirut, Lebanon)

## DOCUMENTATA ATTIVITÀ IN CAMPO CLINICO

(indicare, data, durata, ruolo, ente presso il quale si è prestata attività assistenziale, ecc.)

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## REALIZZAZIONE DI ATTIVITÀ PROGETTUALE

(indicare, data, progetto, ecc.)

Research projects:

- NG-UWB (10/2019- present): Next-generation Ultra-wideband Localization and Communication for the Internet of Things.

Analysis and quantification of the human mobility behavior in indoor environments, based on symbolic representation of the movement. My research activity included the development of an analytical framework for the detection and analysis of stop-move patterns in indoor mobility data in realistic scenarios. The objectives are: first, to examine the performance of the existing stop detection methods in realistic movement scenarios. Second, to define a validation metric to evaluate the quality of patterns based on their spatial and temporal characteristics. And third to investigate analytical methods of interest for a museum application.

The project is a part of the PRIN Program (Research Projects of National Relevance).

Members: University of Trento (coordinator), University of Milan, Politecnico di Torino, University of Brescia.

- Snap4City (04/2018- 09/2019): The project aims to collect and share data from heterogeneous and numerous devices enabled by IOT/IOE technologies and big data analytic, for purposes of management and better interaction in order to cope the city evolution in terms of services and city users’ needs and capabilities. My research activity contributed into the study of the problem of semantic integration of sensor data produced in heterogeneous contexts: Semantic extraction rules have been developed in order to identify relevant information produced by sensors and to which it is possible to associate a semantic label and to transform the data into a common representation. These transformations have a positive impact on the development of IoT applications. In addition, various usability analyzes of the developed system were conducted which allowed to improve the appreciation of the system by possible users.

The project is proposed in response to Select4Cities challenges and is funded by the European Union’s Horizon 2020 research and innovation program.

Members: University of Florence (coordinator), University of Milan.

**ORGANIZZAZIONE, DIREZIONE E COORDINAMENTO DI GRUPPI DI RICERCA NAZIONALI E INTERNAZIONALI, O PARTECIPAZIONE AGLI STESSI**

*(per ciascuna voce inserire anno, ruolo, gruppo di ricerca, ecc.)*

- The 2nd ACM SIGSPATIAL International Workshop on Animal Movement Ecology and Human Mobility (HANIMOB'22). November 2022, Seattle, WA, USA.
- The 1st ACM SIGSPATIAL International Workshop on Animal Movement Ecology and Human Mobility (HANIMOB'21). November 2021, Beijing, China (held virtually).

**TITOLARITÀ DI BREVETTI**

*(per ciascun brevetto, inserire autori, titolo, tipologia, numero brevetto, ecc.)*

**ATTIVITÀ DI RELATORE A CONGRESSI E CONVEGNI NAZIONALI E INTERNAZIONALI**

*(inserire titolo congresso/convegno, data, ecc.)*

- “Multi-scale framework for attraction place identification across human and animal mobility”. ACM SIGSPATIAL HANIMOB workshop, November 2021, Beijing, China “Discovering gatherings based on individual mobility patterns: challenges and direction”. IEEE International Conference on Data Mining (ICDM), November 2017, New Orleans, USA.
- “Analysis and understanding of mobility behavior from traces”. 16th MDPS Workshop, June 2016, Garda Lake, Italy.

**CONSEGUIMENTO DI PREMI E RICONOSCIMENTI NAZIONALI E INTERNAZIONALI PER ATTIVITÀ DI RICERCA**

*(inserire premio, data, ente organizzatore, ecc.)*

**POSSESSO DEL DIPLOMA DI SPECIALIZZAZIONE EUROPEA RICONOSCIUTO DA BOARD INTERNAZIONALI (relativamente a quei settori concorsuali nei quali è prevista)**

*(indicare diploma, data di conseguimento, ecc.)*

**TITOLI DI CUI ALL'ARTICOLO 24 COMMA 3 LETTERA A) E B) DELLA LEGGE 30 DICEMBRE 2010, N. 240**

*(indicare se contratto di tipologia A o B, Ateneo, data di decorrenza e fine contratto, ecc.)*

## **PRODUZIONE SCIENTIFICA**

### **PUBBLICAZIONI SCIENTIFICHE**

*(per ciascuna pubblicazione indicare: nomi degli autori, titolo completo, casa editrice, data e luogo di pubblicazione, codice ISBN, ISSN, DOI o altro equivalente)*

•Fatima Hachem, Davide Vecchia, Maria Luisa Damiani and Gian Pietro Picco. "Fine-grained Stop-Move Detection with UWB: Quality Metrics and Real-world Evaluation". (in submission).

•Maria Luisa Damiani, Fatima Hachem, Christian Quadri, Matteo Rossini, and Sabrina Gaito. "On Location Relevance and Diversity in Human Mobility Data". ACM Transactions on Spatial Algorithms and Systems 7 (2), 1- 38. (2020)

•Maria Luisa Damiani, Fatima Hachem, Hamza Issa, Nathan Ranc, Paul Moorcroft & Francesca Cagnacci. "Cluster-based trajectory segmentation with local noise". Data Mining and Knowledge Discovery 32 (4), 1017-1055. (2018)

•Maria Luisa Damiani and Fatima Hachem. "Segmentation techniques for the summarization of individual mobility data". Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery 7 (6), e1214. (2017)

Papers in International Conferences with peer review:

•Fatima Hachem, Davide Vecchia, Maria Luisa Damiani and Gian Pietro Picco. "Fine-grained Stop-Move Detection in UWB-based Trajectories" --In: 20th IEEE International Conference on Pervasive Computing and Communications, PerCom 2022. Pisa, Italy, March 2022

•Maria Luisa Damiani, Fatima Hachem, and Sabrina Gaito. "Multi-scale framework for attraction place identification across human and animal mobility" --In: 1st ACM SIGSPATIAL International Workshop on Animal Movement Ecology and Human Mobility. Beijing, China, November 2021

•Maria Luisa Damiani, Andrea Acquaviva, Fatima Hachem, and Matteo Rossini. "Learning behavioral representations of human mobility" -- In: 28th ACM SIGSPATIAL, Seattle, Washington, USA, November 2020

•Maria Luisa Damiani, Fatima Hachem, Christian Quadri, Sabrina Gaito. "Location relevance and diversity in symbolic trajectories with application to telco data" - In: 16th International Symposium on Spatial and Temporal Databases, Vienna, Austria, August 2019

•Stefano Valtolina, Barbara Rita Barricelli, Fatima Hachem, Elefelious Getachew, Sara Bonfitto, Marco Mesiti. "Facilitating the Development of IoT Applications in Smart City Platforms"--In: 7th International Symposium on End-User Development. Hertfordshire, UK, July 2019

•Sara Bonfitto, Fatima Hachem, Elefelious Getachew, Stefano Valtolina, Marco Mesiti. "On the Bulk Ingestion of IoT Devices from Heterogeneous IoT Brokers" -- In: IEEE Int'l Congress on Internet of Things, Milan, Italy, July 2019.

•C. Badii, E.G. Belay, P. Bellini, D. Cenni, F. Hachem, M. Marazzini, M. Mesiti, P. Nesi, G. Pantaleo, M. Paolucci, S. Valtolina, M. Soderi, I. Zaza. "Snap4City: A Scalable IOT/IOE Platform for Developing Smart City Applications ". In: 2018 IEEE SmartWorld (SCALCOM/UIC/ATC/ CBDDCom/IOP/SCI), Guangzhou, China, October 2018

•Fatima Hachem, Maria Luisa Damiani. "Periodic stops discovery through density-based trajectory segmentation" -- In: 26th ACM SIGSPATIAL, Seattle, WA, USA., November 2018

•Fatima Hachem, Maria Luisa Damiani, and Hamza Issa. “Discovering gatherings based on individual mobility patterns: challenges and direction” -- In: IEEE Workshop on Spatial and Spatiotemporal Data Mining (SSTDm), New Orleans, Louisiana, USA, November 2017.

•Maria Luisa Damiani, Hamza Issa, Giuseppe Fotino, Fatima Hachem, Nathan Ranc, and Francesca Cagnacci. “Migro: A plug-in for the analysis of individual mobility behavior based on the stay region model” -- In: 23rd ACM SIGSPATIAL, Seattle, Washington, USA, November 2015.

#### Papers in National Conferences:

•C. Badii, P. Bellini, A. Difino, F. Hachem, M. Mesiti, P. Nesi, G. Pantaleo, M. Paolucci, S. Valtolina. “Snap4City Evolving Solution for IOT Based Smart Cities” - In: 5th Italian Conference on ICT for Smart Cities and Communities Pisa, Italy, September, 2019.

•C. Badii, P. Bellini, A. Difino, F. Hachem, M. Mesiti, P. Nesi, S. Valtolina. “Node-RED IOT Applications for Smart City” - In: 5th Italian Conference on ICT for Smart Cities and Communities Pisa, Italy, September, 2019.

•C. Badii, E.G. Belay, P. Bellini, D. Bologna, D. Cenni, A. Difino, F. Hachem, M. Marazzini, M. Mesiti, N. Mitolo, P. Nesi, I. Paoli, M. Paolucci, S. Valtolina, I. Zaza. “Snap4City a Solution for highly collaborative Smart Cities Environments” - In: 4th Italian Conference on ICT for Smart Cities and Communities, L'Aquila, Italy, September, 2018.

#### Proceedings editing and reports:

•Federico Ossi, Fatima Hachem, Benjamin Robira, Diego Ellis Soto, Christian Rutz, Somayeh Dodge, Francesca Cagnacci, Maria Luisa Damiani: HANIMOB@SIGSPATIAL 2022: Proceedings of the 2nd ACM SIGSPATIAL International Workshop on Animal Movement Ecology and Human Mobility, Seattle, WA, USA, 1 November 2022. ACM 2022, ISBN 978-1-4503-9534-2

•Federico Ossi, Fatima Hachem, Francesca Cagnacci, UrskaDemsar, Maria Luisa Damiani: HANIMOB@SIGSPATIAL 2021: Proceedings of the 1st ACM SIGSPATIAL International Workshop on Animal Movement Ecology and Human Mobility, Beijing,China, 2 November 2021. ACM 2021, ISBN 978-1-4503-9122-1

•Federico Ossi, Fatima Hachem, Benjamin Robira, Diego Ellis Soto, Christian Rutz, Somayeh Dodge, Francesca Cagnacci, Maria Luisa Damiani. “HaniMob 2022 Workshop Report The 2nd ACM SIGSPATIAL Workshop on Animal Movement Ecology and Human Mobility”. SIGSPATIAL Special, In press.

•Federico Ossi, Fatima Hachem, Francesca Cagnacci, UrskaDemsar, Maria Luisa Damiani. “HaniMob 2021 Workshop Report The 1st ACM SIGSPATIAL Workshop on Animal Movement Ecology and Human Mobility”. SIGSPATIAL Special, In press.

Data

09/01/2023

Luogo

Milano