CURRICULUM VITAE ET STUDIORUM

1. PERSONAL INFORMATION

1.1 Name: Fabio PERSIA

1.2 Office address:

- University of L'Aquila, Department of Information Engineering, Computer Science and Mathematics, Via Vetoio, 67100 L'Aquila AQ, ITALY
- E-mail address: fabio.persia@univaq.it
- Web: https://www.disim.univaq.it/FabioPersia

2. SPECIALIZATIONS

2.1 Main Area

- 09/Ingegneria Industriale e dell'Informazione – SSD ING-INF/05 – Sistemi di Elaborazione delle Informazioni
- 01/Scienze Matematiche ed Informatiche – SSD INF/01 – Informatica

2.2 Keywords

- database, event detection, analysis in large scale databases, video surveillance applications, social network analysis

3. PROFESSIONAL ACTIVITIES

3.1 Present position

- Tenure-Track Assistant Professor (RTD/B), Department of Information Engineering, Computer Science and Mathematics, University of L'Aquila, Italy – since 2020/Nov

3.2 Professional Employments

- 2015/May -> 2020/Oct - Assistant Professor (RTD/A), Faculty of Computer Science, Free University of Bozen-Bolzano - Italy
- 2013/Jul → 2015/Apr – Postdoctoral Research Fellow, Department of Electrical Engineering and Information Technology, University of Naples "Federico II" – Italy
- 2010/Mar → 2013/Apr – PhD Fellowship at the Department of Electrical Engineering and Information Technology of the University of Naples "Federico II" – Italy
- 2009/May → 2009/Dec – Pre-doctoral Internship (Co.Co.Co.), Department of Electrical Engineering and Information Technology, University of Naples "Federico II" – Italy

3.3 Visiting Experience

- 2019/Oct → 2020/Jan – Visiting Research Fellow (under the supervision of Prof. Michael Bohlen), Department of Informatics, University of Zurich, Zurich, Switzerland
- 2019/Jul → 2019/Sep – Visiting Research Fellow (under the supervision of Prof. Mouzhi Ge), Faculty of Informatics, Masaryk University, Brno, Czech Republic
- 2010/Nov → 2011/Apr – PhD Visiting Scholar (under the supervision of Prof. V.S. Subrahmanian), University of Maryland Institute for Advanced Computer Studies (UMIACS), University of Maryland, College Park, MD, USA

4. EDUCATION

4.1 Academic degrees including year of graduation (M.Sc., Ph.D., etc.)

- 2013/Apr – University of Naples "Federico II", PhD in Computer Science and Engineering
- 2009/Mar - University of Naples "Federico II", Master Degree in Computer Engineering
- 2006/Feb - University of Naples "Federico II", Bachelor Degree in Computer Engineering

4.2 Habilitations

- 2020/Nov -> Italian National Scientific Habilitation (ASN) as Associate Professor in the scientific-disciplinary sector INF/01
- 2020/Nov -> Italian National Scientific Habilitation (ASN) as Associate Professor in the scientific-disciplinary sector ING-INF/05
- 2015/Apr → today – Member of Ordine degli Ingegneri della Provincia di Napoli
- 2009/Nov – Ordine degli Ingegneri – Chartered Engineer

5. LANGUAGES

5.1 Italian – Mother tongue

5.2 English – C1, Cambridge Certificate in Advanced English (CAE) got in June 2016

5.3 French – Discrete speaking and reading abilities (A2)

5.4 German - Discrete speaking and reading abilities (A2)

6. SCIENTIFIC ACHIEVEMENTS

6.1 Summary of Publications

- International Academic Referred Journals: 10
- Book Chapters: 2
- Peer Reviewed International Conferences and Workshops with Formal Proceedings: 61

6.2 Summary of citation data

- Scopus Citation Report (AuthorSearch)
    - Total Citations: 636 – H-index: 15
- Google Scholar Report (MyCitations)
    - Total Citations: 877 – H-index: 18

7. SCIENTIFIC ACTIVITIES

7.1 Journal Editorial Activities

- Associate Editor of International Peer Reviewed Journal
    - International Journal of Humanized Computing and Communication (IJHCC) – KS PRESS, (Editor in Chief)
    - Editorial Board Member of the Encyclopedia with Semantic Computing and Robotic Computing (ESCRI) – World Scientific
    - Associate Editor of the International Journal of Semantic Computing (IJSC) – World Scientific

- Special Issue Editor
    - International Journal of Semantic Computing (IJSC) – World Scientific, Vol. 13, No. 4 (2019)
    - International Journal of Semantic Computing (IJSC) – World Scientific, Vol. 12, No. 3 (2018)
    - International Journal of Semantic Computing (IJSC) – World Scientific, Vol. 11, No. 3 (2017)

- Reviewers for Journals
    - Concurrency and Computation: Practice and Experience (CCPE), Symmetry, Information, Journal of Networking and Communication Systems (JNACS), Applied Sciences, International Journal of Multimedia Data Engineering and Management (IJMDEM), Journal of Information Science, International Journal of Humanized Computing and Communication, International Journal of Semantic Computing, Encyclopedia with Semantic Computing and Robotic Computing

7.2 Scientific and Technical Committees

- Technical Program Committee Member
    - SEBD (2014), IEEE WETICE (2017→2019), IEEE ICSC (2017→now), IEEE IRC (2017→now), IEEE AI4I (2018→now), IEEE HCC (2019), IEEE GC (2019), IEEE ISM (2019)
    - Workshops: CADSA (3PGCIC conference - 2014,2015), DEW (IEEE WETICE conference, 2017→2019), NFCR (IEEE IRC conference, 2017→now), SR (IEEE ICSC conference, 2017→now), SMC (IEEE ICSC conference, 2017→now)

7.3 Invited talks, paper presentations and conference chairmanships

- Program Chair of the following Conferences and Workshops
    - IEEE Multimedia Big Data (IEEE BigMM 2021)
    - Third International Conference on Transdisciplinary AI (TransAI 2021)
    - IEEE NFCR 2021 – Fifth IEEE International Workshop on New Frontiers in Computational Robotics, in conjunction with IEEE IRC 2021
    - IEEE SMC 2021 – Fifth IEEE International Workshop on Semantic Multimedia Computing, in conjunction with IEEE ICSC 2021
    - Second International Conference on Transdisciplinary AI (TransAI 2020)
    - 2020 IEEE International Conference on Humanized Computing and Communication with Artificial Intelligence, HCCAI 2020
    - IEEE NFCR 2020 – Fourth IEEE International Workshop on New Frontiers in Computational Robotics, in conjunction with IEEE IRC 2020
    - IEEE SMC 2020 – Fourth IEEE International Workshop on Semantic Multimedia Computing, in conjunction with IEEE ICSC 2020
    - IEEE ICSC 2019 – 13th IEEE International Conference on Semantic Computing
    - IEEE HCC 2019 - First IEEE International Conference on Humanized Computing and Communication
    - IEEE GC 2019 - First IEEE International Conference on Graph Computing
    - IEEE ISM 2019 - 21st IEEE International Symposium on Multimedia
    - IEEE NFCR 2019 – Third IEEE International Workshop on New Frontiers in Computational Robotics, in conjunction with IEEE IRC 2019
    - IEEE SMC 2019 – Third IEEE International Workshop on Semantic Multimedia Computing, in conjunction with IEEE ICSC 2019
    - IEEE ICSC 2018 – 12th IEEE International Conference on Semantic Computing
    - IEEE NFCR 2018 – Second IEEE International Workshop on New Frontiers in Computational Robotics, in conjunction with IEEE IRC 2018
    - IEEE SMC 2018 – Second IEEE International Workshop on Semantic Multimedia Computing, in conjunction with IEEE ICSC 2018
    - IEEE NFCR 2017 – First IEEE International Workshop on New Frontiers in Computational Robotics, in conjunction with IEEE IRC 2017
    - IEEE SMC 2017 – First IEEE International Workshop on Semantic Multimedia Computing, in conjunction with IEEE ICSC 2017
- General Chair of the following Conferences and Workshops
    - IEEE ISM 2021 – 23rd IEEE International Symposium on Multimedia
    - IEEE ISM 2020 – 22nd IEEE International Symposium on Multimedia
- Organizing Committee member of the following Conferences
    - SEBD 2014 – Local Organizing Committee Member
    - IEEE IRC 2017 - Workshop Committee Co-Chair

- o SR 2017 – Publicity Chair
  - o IEEE IRC 2018 - Panel Committee Chair
  - o SR 2018 – Publicity Chair
  - o IEEE IRC 2019 - Panel Committee Chair
  - o SR 2019 – Publicity Chair
- Invited Talks
  - o 2021 – Department of Information Engineering, Computer Science and Mathematics, University of L'Aquila (virtual talk), "Event Detection with Temporal Predicates"
  - o 2020 - Florida Agricultural and Mechanical University (FAMU), Tallahassee, Florida (virtual talk), USA, "Event Detection with Temporal Predicates"
  - o 2020 – University of California, Irvine, USA, "Event Detection with Temporal Predicates"
  - o 2019 – IEEE ISM 2019, "An Interactive Framework for Video Surveillance Event Detection"
  - o 2019 – University of Salzburg, Austria, "An Interactive Framework for Video Surveillance Event Detection"
  - o 2019 – IEEE IRC 2019/NFCR 2019, "An Interactive Framework for Video Surveillance Event Detection"
  - o 2018 – Alperia Workshop @ ASITA 2018, "Un Sistema Interattivo per la Modellazione ed il Riconoscimento Automatico di Eventi Complessi nel Contesto della Videosorveglianza"
  - o 2017 – Liceo "Cantore" Brunico, "Introduction to a Phd School about Semantics in Robotics"
  - o 2013 – Eurecom, Nice, France, "Finding Unexplained Activities in Time-Stamped Observation Data"
  - o 2013 – Free University of Bozen-Bolzano, "Finding Unexplained Activities in Time-Stamped Observation Data"
- Paper presentations (with reference to the paper list shown in section 10.3)
  - o [C56], [C54], [C53], [C52], [C50], [C49], [C48], [C47], [C46], [C44], [C43], [C41], [C38], [C37], [C36], [C34], [C33], [C32], [C27], [C24], [C23], [C19], [C18], [C16], [C15], [C11], [C7]

8. COORDINATED RESEARCH PROJECTS

8.1 Projects for which I am the principal investigator (PI):

- A Smart Framework for Automatically Analyzing Electrocardiograms
  - o Role: PI
  - o Performance Period: 2021 → 2022
  - o Funding: 3K€ from the University of L'Aquila

- PES 2020 – fast learning and Prediction of Event Sequences in a video surveillance system
  - o Role: PI
  - o Performance Period: 2020 → 2021
  - o Funding: 5K€ from the Province of Bolzano

- Tourist SENSOR – Tourist trip planning using Social sENSing Orienteering
  - o Role: PI
  - o Duration: 2019 → 2020
  - o Bolzano Funding 10K€ from the Province of Bolzano

- HAMSIK – High-level AutoMatic event detection in a SocIal networK context
  - o Role: PI
  - o Duration: 2018 → 2020
  - o Bolzano Funding 5K€ from the Province of Bolzano

- SARRI – the SmArt Rapiro Robot Integrating a framework for the automatic high-level surveillance event detection
    - Role: PI
    - Duration: 2017 → 2018
    - Bolzano Funding 7K€ from the Province of Bolzano

- HLSED – High-Level Surveillance Event Detection
    - Role: PI
    - Duration: 2016 → 2017
    - Bolzano Funding 20K€ from the Province of Bolzano

8.2 Projects for which I am the co-principal investigator (Co-PI):

- H2I - Hyperspectral images for inspection applications
    - Role: Co-PI
    - Performance Period: 2019 → 2021
    Funding: 2,000,000 € from the European Regional Development Fund Programme (EU/Province of Bolzano)

9. TEACHING

9.1 Academic Teaching

- Main Lecturer

    Academic Year 2021/22
    - Intelligent Knowledge Representation and Processing for Event Detection, University of L'Aquila, Master in Computer Science, 5 students
    - Computer Science for Companies, University of L'Aquila, Bachelor in Business Legal Operator, 10 students

    Academic Year 2020/21
    - Web Algorithms, University of L'Aquila, Master in Computer Science, 43 students
    - Computer Science for Companies, University of L'Aquila, Bachelor in Business Legal Operator, 21 students

    Academic Year 2019/20
    - Operating Systems, Free University of Bozen-Bolzano, Bachelor in Computer Science, 51 students
    - Operating Systems Lab, Free University of Bozen-Bolzano, Bachelor in Computer Science, 51 students

    Academic Year 2018/19
    - Operating Systems, Free University of Bozen-Bolzano, Bachelor in Computer Science, 42 students
    - Operating Systems Lab, Free University of Bozen-Bolzano, Bachelor in Computer Science, 21 students

    Academic Year 2017/18

    - Operating Systems, Free University of Bozen-Bolzano, Bachelor in Computer Science, 46 students
    - Operating Systems Lab, Free University of Bozen-Bolzano, Bachelor in Computer Science, 23 students
    - Operating Systems, Free University of Bozen-Bolzano, Bachelor in Computer Science and Engineering, 53 students
    - Operating Systems Lab, Free University of Bozen-Bolzano, Bachelor in Computer Science and Engineering, 27 students

    Academic Year 2016/17

    - Operating Systems, Free University of Bozen-Bolzano, Bachelor in Computer Science and Engineering, 55 students

- o Operating Systems Lab, Free University of Bozen-Bolzano, Bachelor in Computer Science and Engineering, 23 students

  Academic Year 2015/16

  o Operating Systems, Free University of Bozen-Bolzano, Bachelor in Computer Science and Engineering, 58 students
  o Operating Systems Lab, Free University of Bozen-Bolzano, Bachelor in Computer Science and Engineering, 29 students

- Teaching Assistant

  Academic Year 2014/15
    o Basic Informatics, University of Naples "Federico II", Bachelor in Computer Engineering, 150 students
    o Basic Informatics, University of Naples "Federico II", Bachelor in Biomedical Engineering, 200 students
    o Databases I, University of Naples "Federico II", Bachelor in Computer Engineering, 150 students
    o Multimedia Systems, University of Naples "Federico II", Master in Computer Engineering, 100 students
  Academic Year 2013/14
    o Basic Informatics, University of Naples "Federico II", Bachelor in Computer Engineering, 150 students
    o Basic Informatics, University of Naples "Federico II", Bachelor in Biomedical Engineering, 200 students
    o Databases I, University of Naples "Federico II", Bachelor in Computer Engineering, 150 students
  Academic Year 2012/13
    o Basic Informatics, University of Naples "Federico II", Bachelor in Computer Engineering, 150 students
    o Electronic Devices I, University of Naples "Federico II", Bachelor in Biomedical Engineering, 200 students
    o Databases I, University of Naples "Federico II", Bachelor in Computer Engineering, 150 students
    o Databases II, University of Naples "Federico II", Master in Computer Engineering, 100 students
  Academic Year 2011/12
    o Basic Informatics, University of Naples "Federico II", Bachelor in Computer Engineering, 150 students
    o Databases I, University of Naples "Federico II", Bachelor in Computer Engineering, 150 students
  Academic Year 2010/11
    o Basic Informatics, University of Naples "Federico II", Bachelor in Computer Engineering, 150 students
    o Databases I, University of Naples "Federico II", Bachelor in Computer Engineering, 150 students
  Academic Year 2009/10
    o Informatics, University of Naples "Federico II", Bachelor in Pharmacy, 150 students

9.2 Professional Teaching

- 2019, Microtec Srl – Bressanone (BZ), Course on Advanced C++, 15 students
- 2016, Consvip S.C.AR.L., Napoli, Course on Excel, 10 students
- 2011 → 2014, Biogem – Ariano Irpino, University-Industry Internship training Program (UIIP), Courses on PHP, Databases I, Databases II, XML and Data Binding, Java, from 20 to 50 students
- 2014, SESM – Giugliano (NA), PON project "DISPLAY-FARM", Course on Database I, 20 students
- 2012, University of Naples "Federico II", PON project "IESWECAN", Courses on C and Java, 20 students
- 2012, Technical Institute "Renato Elia" – Castellammare di Stabia (NA), Course on C++, 10 students
- 2010, Alenia Aeronautica SpA – Pomigliano d'Arco (NA), Courses on Microsoft Office: Word, Excel, Access, PowerPoint, 10 students

9.3 Supervisions

Thesis

- 2020, thesis second reader of 1 student, PhD degree in Computer Science, Free University of Bozen-Bolzano (ING-INF/05)

- 2015 → 2019, 2 students, Bachelor degree in Computer Science, Free University of Bozen-Bolzano (ING-INF/05)
- 2009 → 2014, 21 students, Bachelor degree in Computer Engineering, University of Naples "Federico II" (ING-INF/05)
- 2009 → 2014, 10 students, Master degree in Computer Engineering, University of Naples "Federico II" (ING-INF/05)
- 2010, 1 student, Bachelor degree in Biomedical Engineering, University of Naples "Federico II" (ING-INF/05)

AR

- 2017, Fabio Bettini, working on the "the SmArt Rapiro Robot Integrating a framework for the automatic high-level surveillance event detection" (SARRI) project, Free University of Bozen-Bolzano
- 2017, Danila Piatov, working on the "High-Level Surveillance Event Detection" (HLSED) project, Free University of Bozen-Bolzano
- 2016, Fabio Bettini, working on the "High-Level Surveillance Event Detection" (HLSED) project, Free University of Bozen-Bolzano

Bachelor students

- Tutor of 10 bachelor students during the academic years 2017/18, 2018/19, 2019/20, 2020/21.

10. DETAILED PUBLICATION LIST

10.1 International Academic Referred Journals

Journal publications ranked Q1 according to **Scimago** are listed in bold.

2021

[J10] D. Piatov, S. Helmer, A. Dignös, F. Persia, Cache-Efficient Sweeping-Based Interval Joins for Extended Allen Relation Predicates, The VLDB Journal (2021), 30, 379–402, (2021).

2020

[J9] *F. Persia*, G. Pilato, M. Ge, P. Bolzoni, D. D'Auria, S. Helmer, Improving Orienteering-based Tourist Trip Planning with Social Sensing, "Data Exploration in the Web 3.0 Age" on the *Future Generation Computer Systems (FGCS)* Journal 110, 931-945 (2020).

2018

[J8] F. Amato, A. Castiglione, A. De Santo, V. Moscato, A. Picariello, *F. Persia*, G. Sperlì, Recognizing human behaviours in online social networks, *Computers & Security* 74, 355-370, (2018).

[J7] M. Ge, *F. Persia*, A generalized evaluation framework for multimedia recommender systems, *International Journal of Semantic Computing (IJSC)*, 12 (04), 541-557, (2018).

[J6] D. D'Auria, *F. Persia*, A Methodology for Improving Vegetation Representation and Health Exploiting a Semantic Robotic System and Its Dynamic Stability Control, *International Journal of Semantic Computing (IJSC)*, 12 (01), 25-41, (2018).

2017

[J5] M. Ge, *F. Persia*, A Survey of Multimedia Recommender Systems: Challenges and Opportunities. *Int. J. Semantic Computing (IJSC),* 11(3): 411-428, (2017).

2016

[J4] S. Helmer, *F. Persia*, ISEQL, an Interval-based Surveillance Event Query Language, *International Journal of Multimedia Data Engineering & Management (IJMDEM)*, vol. 7, p. 1-21, ISSN: 1947-8534, (2016).

2014

[J3] M. Albanese, C. Molinaro, *F. Persia*, A. Picariello, V. S. Subrahmanian, Discovering the Top-k Unexplained Sequences in Time-Stamped Observation Data, *IEEE Transactions on Knowledge and Data Engineering (IEEE TKDE)*, 26(3): 577-594, (2014).

2013

[J2] M. Albanese, A. d'Acierno, V. Moscato, *F. Persia*, A. Picariello, A Multimedia Recommender System, *ACM Transactions on Internet Technology (ACM TOIT)*, 13(1): 3:1-3:32, (2013).

2011

[J1] M. Albanese, A. d'Acierno, V. Moscato, *F. Persia*, A. Picariello, A Novel Strategy for Recommending Multimedia Objects and its Application in the Cultural Heritage Domain, International Journal of Multimedia Data Engineering & Management (IJMDEM), vol. 2, issue 4 p. 1-18, (2011).

10.2 Book Chapters

[B2] F. Amato, L. Greco, *F. Persia*, S. R. Poccia, A. De Santo: *Content-Based Multimedia Retrieval, Data Management in Pervasive Systems*, 291-310, (2015).

[B1] M. Albanese, R. F. Erbacher, S. Jajodia, C. Molinaro, *F. Persia*, A. Picariello, G. Sperlì, V. S. Subrahmanian: Recognizing Unexplained Behavior in Network Traffic, *Network Science and Cybersecurity*, 39-62, (2014).

10.3 Peer Reviewed International Conferences and Workshops with Formal Proceedings

Conference publications ranked A or A* according to the **CORE Conference Portal** are listed in bold.

2021

[C61] V.E. Carusotto, G. Pilato, F. Persia, M. Ge, "User Profiling for Tourist Trip Recommendations using Social Sensing", 2021 IEEE International Symposium on Multimedia (ISM), (2021).

[C60] S. Costantini, L. De Lauretis, C. Ferri, J. Giancola, F. Persia, "A Smart Health Assistant via DALI Logical Agents", 36th Italian Conference on Computational Logic (CILC), (2021).

[C59] F. Persia, S. Costantini, C. Ferri, L. De Lauretis, D. D'Auria, "A Smart Framework for Automatically Analyzing Electrocardiograms", 2021 IEEE Third International Conference on Transdisciplinary AI (TransAI), 64-67, (2021).

[C58] D. D'Auria, F. Persia, "Robots against the Coronavirus: the need for a new generation of robots to help global society", 2021 IEEE 15th International Conference on Semantic Computing (IEEE ICSC 2021), virtual, (2021).

2020

[C57] C. Roggia, F. Persia, "Extraction of Frame Sequences in the Manga Context", 22nd IEEE International Symposium on Multimedia (IEEE ISM 2020), virtual, (2020).

[C56] F. Persia, D. D'Auria and G. Pilato, "Fast Learning and Prediction of Event Sequences in a Robotic System", *2020 Fourth IEEE International Conference on Robotic Computing (IEEE IRC 2020)*, virtual, (2020).

[C55] J. R. Barr, D. D'Auria and F. Persia, "Telemedicine, Homecare in the Era of COVID-19 & Beyond", *2020 Third International Conference on Artificial Intelligence for Industries (IEEE ai4i 2020)*, virtual, (2020).

[C54] *F. Persia*, D. D'Auria, G. Pilato: An Overview of Video Surveillance Approaches, *2020 IEEE 14th International Conference on Semantic Computing (IEEE ICSC 2020)*, San Diego, CA, USA, (2020).

[C53] *F. Persia*, D. D'Auria, M. Ge: Improving Learning System Performance with Multimedia Semantics, *2020 IEEE 14th International Conference on Semantic Computing (IEEE ICSC 2020)*, San Diego, CA, USA, (2020).

2019

[C52] M. Ge, *F. Persia*, D. D'Auria: Advanced Recommender Systems by Exploiting Social Networks, *First IEEE International Conference on Humanized Computing and Communication (IEEE HCC 2019)*, Laguna Hills, CA, USA (2019).

[C51] D. D'Auria, M. Ge, *F. Persia*: Exploiting Recommender Systems in Collaborative Healthcare, the 16th International Symposium on Pervasive Systems, Algorithms and Networks (I-SPAN 2019), Naples, Italy, (2019).

[C50] *F. Persia* and S. Helmer: High-level Automatic Event Detection and User Classification in a Social Network Context, *the Sixth International Workshop on Graphical Models for Security (GraMSec 2019) – co-located with 32nd IEEE Computer Security Foundations Symposium (IEEE CSF 2019)*, Hoboken, NJ, USA, (2019).

[C49] D. D'Auria, *F. Persia*, F. Bettini, S. Helmer: Predicting and Preventing Dangerous Events via Video Surveillance Using a Robotic Platform, *2019 Third IEEE International Conference on Robotic Computing (IEEE IRC 2019)*, 549-554, Naples, Italy, (2019).

[C48] M. Ge, *F. Persia*: Factoring Personalization in Social Media Recommendations, *2019 IEEE 13th International Conference on Semantic Computing (IEEE ICSC 2019)*, 344-347, Newport Beach, CA, USA, (2019).

[C47] *F. Persia*, S. Helmer, S. Pugacs, G. Pilato, Social Sensing for Improving the User Experience in Orienteering, *2019 IEEE 13th International Conference on Semantic Computing (IEEE ICSC 2019)*, 239-246, Newport Beach, CA, USA, (2019).

2018

[C46] D. D'Auria, *F. Persia*: Design of a Framework Allowing Researchers to Optimize Their Academic Evaluation, *2018 First International Conference on Artificial Intelligence for Industries (IEEE ai4i 2018)*, 89-91, Laguna Hills, CA, USA, (2018).

[C45] *F. Persia*, M. Ge, D. D'Auria, How to Exploit Recommender Systems in Social Media, *2018 IEEE International Conference on Information Reuse and Integration (IEEE IRI 2018)*, 537-541, Salt Lake City, Utah, USA, (2018).

[C44] D. D'Auria, *F. Persia*, F. Bettini, S. Helmer, B. Siciliano: SARRI: a SmArt Rapiro Robot Integrating a framework for automatic high-level surveillance event detection, *in: 2018 Second IEEE International Conference on Robotic Computing (IEEE IRC 2018)*, 238-241, Laguna Hills, CA, USA, (2018).

[C43] *F. Persia*, S. Helmer: A Framework for High-Level Event Detection in a Social Network Context Via an Extension of ISEQL, *in: IEEE, 2018 IEEE Twelfth International Conference on Semantic Computing (IEEE ICSC 2018)*, 140-147, Laguna Hills, CA, USA, (2018).

[C42] M. Ge, *F. Persia*: Evaluation in Multimedia Recommender Systems: a Practical Guide, *in: IEEE, 2018 IEEE Twelfth International Conference on Semantic Computing (IEEE ICSC 2018)*, 294-297, Laguna Hills, CA, USA, (2018).

2017

[C41] *F. Persia*, F. Bettini, S. Helmer: An Interactive Framework for Video Surveillance Event Detection and Modeling, *in: Proceedings of the 2017 ACM on Conference on Information and Knowledge Management (ACM CIKM '17)*, 2515—2518, Singapore, (2017).

[C40] P. Bolzoni, *F. Persia*, S. Helmer: Itinerary Planning with Category Constraints Using a Probabilistic Approach*, in: Database and Expert Systems Applications: 28th International Conference, DEXA 2017*, 363—377, Lyon, France, (2017).

[C39] *F. Persia*, D. D'Auria: A Methodology for Improving Vegetation Representation and Health Exploiting a Semantic Robotic System, *in: Proceedings of the First International Workshop on Semantic Robotics (SR '17), co-located with the 2017 IEEE Eleventh International Conference on Semantic Computing (IEEE ICSC 2017)*, 499-502, San Diego, CA, USA, (2017).

[C38] D. D'Auria, *F. Persia*: The Role of Semantics in Improving Medical Doctors' Performance, *in: 2017 First IEEE International Conference on Robotic Computing (IEEE IRC 2017)*, 428-433, Taichung, Taiwan, (2017).

[C37] M. Ge, *F. Persia*: Research Challenges in Multimedia Recommender Systems, *In: First International Workshop on Semantic Multimedia Computing (SMC '17) in conjunction with the Eleventh IEEE International Conference on Semantic Computing (IEEE ICSC 2017)*, 344-347, San Diego, CA, USA, (2017).

[C36] *F. Persia*, F. Bettini, S. Helmer: Labeling the Frames of a Video Stream with Interval Events, *in: Proceedings - IEEE 11th International Conference on Semantic Computing (IEEE ICSC 2017)*, 204-211, San Diego, CA, USA, (2017).

2016

[C35] D. D'Auria, *F. Persia*, B. Siciliano: Human-Computer Interaction in Healthcare: How to Support Patients during Their Wrist Rehabilitation, *in: 2016 IEEE Tenth International Conference on Semantic Computing (IEEE ICSC 2016)*, 325-328, Laguna Hills, CA, USA, (2016).

[C34] S. Helmer, *F. Persia*: An Interval-based Query Language for High-level Surveillance Event Detection, *in: Proceedings of the 24th Italian Symposium on Advanced Database Systems (SEBD 2016)*, 126-133, Ugento, Italy (2016).

[C33] *F. Persia*, S. Helmer: An Event Detection Framework Supported by a Smart Graphical User Interface, *in: 2016 IEEE 17th International Conference on Information Reuse and Integration (IEEE IRI 2016)*, 490-495, Pittsburgh, PA, USA, (2016).

[C32] S. Helmer, *F. Persia*: High-Level Surveillance Event Detection Using an Interval-Based Query Language, *in: 2016 IEEE Tenth International Conference on Semantic Computing (IEEE ICSC 2016)*, 39-46, Laguna Hills, CA, USA, (2016).

2015

[C31] F. Amato, R. Boselli, M. Cesarini, F. Mercorio, M. Mezzanzanica, V. Moscato, *F. Persia*, A. Picariello: Classification of Web Job Advertisements: A Case Study, *in: the 23rd Italian Symposium on Advanced Database Systems (SEBD 2015)*, 144-151, (2015).

[C30] F. Amato, A. De Santo, F. Gargiulo, V. Moscato, *F. Persia*, A. Picariello, G. Sperlì: A Novel Approach to Query Expansion based on Semantic Similarity Measures, *in: Proceedings of the 4th International Conference on Data Management Technologies and Applications (DATA 2015)*, 344-353, (2015).

[C29] F. Amato, A. De Santo, V. Moscato, *F. Persia*, A. Picariello, S.R. Poccia, G. Sperlì: A structure-based approach for ontology partitioning, *in: the 23rd Italian Symposium on Advanced Database Systems (SEBD 2015)*, 184-191, (2015).

[C28] F. Colace, M. De Santo, L. Greco, F. Amato, V. Moscato, *F. Persia*, A. Picariello: A user-centered approach for social recommendations, *in: the 8th International Conference on Advances in Computer-Human Interactions (ACHI 2015)*, 190-193, (2015).

[C27] D. D'Auria, *F. Persia*: A framework for real-time evaluation of medical doctors' performances while using a cricothyrotomy simulator, *Communications in Computer and Information Science*, vol. 178, 182-198, (2015).

[C26] D. D'Auria, *F. Persia*, B. Siciliano: A Low-Cost Haptic System for Wrist Rehabilitation, *in: the 2015 IEEE International Conference on Information Reuse and Integration (IEEE IRI 2015)*, 491-495, Redwood City, CA, USA, (2015).

[C25] F. Amato, A. De Santo, F. Gargiulo, V. Moscato, *F. Persia*, A. Picariello, S.R. Poccia: SemTree: an index for supporting semantic retrieval of documents, *in: Proceedings of the 2015 31st IEEE International Conference on Data Engineering (IEEE ICDE 2015)*, 62 -67, (2015).

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11. RESEARCH STATEMENT

I am currently (since November 2020) a *Tenure-Track Assistant Professor* (Italian RTD/B) at the *Information Engineering and Computer Science and Mathematics* (*DISIM*) *Department* of the *University of L'Aquila*, Italy. Previously, I was an *Assistant Professor* (Italian *RTD/A*) at the *Faculty of Computer Science* of the *Free University of Bozen-Bolzano*, Italy. I received the master's and PhD degrees in *Computer Science and Engineering* from the *University of Naples "Federico II"*, Italy, in 2009 and 2013, respectively, under the supervision of *Professors Antonio Picariello* and *Vincenzo Moscato*. During my PhD, I was *visiting scholar* at the *University of Maryland*, *College Park (USA)* for six months, under the supervision of *Prof. V.S. Subrahmanian*. I was also *Postdoctoral Research Fellow* at the *Department of Electrical Engineering and Information Technology* of the *University of Naples "Federico II"* from 2013 to 2015. Moreover, I achieved the *Italian National Scientific Habilitation (ASN)* as *Associate Professor* in the scientific-disciplinary sectors *ING-INF/05* and *INF/01* in November 2020.

My research interests include the fields of *event detection* and *analysis in large scale databases* applied to *multimedia*, *semantic analysis and security*, as demonstrated by several papers published in top journals (such as *TKDE*, *TOIT*, and *VLDBJ*) and conferences (*IJCAI*, *EDBT*, *CIKM*). During my PhD, I mostly worked on the detection of unexplained activities in a sequence of time-stamped observation data [1, 2], under the supervision of Professors *Antonio Picariello*, *Vincenzo Moscato* and *V.S. Subrahmanian*; more specifically, we defined a general model along with some complex algorithms to detect unexplained activities, and we carried out massive experiments in both video surveillance and cyber-security domains. Afterwards, we have also extended such approach to social network analysis [4].

Since I arrived to *Bolzano* (May 2015), I worked on a highly interactive event detection system in the video surveillance context in collaboration with *Prof. Sven Helmer*. Such system ranges from the generation of raw events to the formulation and the detection of complex high-level events in both offline and online modes. We presented the overall system at

CIKM 2017 in *Singapore* [5]. More specifically, the system is based on an extension of relational algebra, *ISEQL* (*Interval-based Surveillance Event Query Language*) - that we defined in a specific paper [6] -, enriched with powerful temporal operators. Such operators have been implemented by defining some very efficient plane sweeping interval join algorithms [3]. Moreover, we have recently also adapted and extended ISEQL to fit the requirements of a social network setting. In fact, we have extended the overall event detection framework to allow the detection of high-level events in a social network context [10], for instance abnormal or malicious behavior such as spamming. Additionally, I also worked on a probabilistic approach for itinerary planning with category constraints (in collaboration with *Dr. Paolo Bolzoni* and *Prof. Sven Helmer*) [7], and on a system including social sensing for improving the user experience in orienteering [8, 9]. Additionally, I was able to attract more than 45,000 euros in funding to finance part of my research work.

One of the main goals of my research will deal with the integration of the new ISEQL operators defined for social network context in the query processing framework of the PostgreSQL database management system. This involves both further extending the ISEQL interval relationships – in order to make them even more flexible - , and improving their efficiency – in order to further speed-up the detection process, especially in a real time setting. Additionally, I also plan to integrate the overall framework for high-level surveillance event detection with a smart robot, in order to enhance the monitoring process. More specifically, the robot will be able to improve the quality of a video stream, which in the earlier work was recorded from a static camera position, by providing a mobile camera, enabling us to get footage from different angles. Furthermore, the robot platform will be able to go beyond just contacting security or the police by taking immediate action when a potentially dangerous event is detected: for instance, picking up an unattended package. Preliminary versions of this framework prototype are shown in [11] and [12]. Then, the following goal would be to improve and extend our current work on event-detection platforms. More specifically, I plan to further increase the efficiency of the data processing components, allowing for faster reaction times and a higher data throughput. Additionally, I want to improve the video capturing capabilities by switching to a multi-camera configuration. Eventually, I plan to replace the Rapiro toy robot that was used for the feasibility studies with more sophisticated hardware to enhance the mobile capabilities of the platform.

Selected Publications

[1] Massimiliano Albanese, Cristian Molinaro, **Fabio Persia**, Antonio Picariello, VS Subrahmanian: *Finding "unexplained" activities in video*. Twenty-Second International Joint Conference on Artificial Intelligence (IJCAI'11), Barcelona, July 2011: 1628-1634.

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[3] Danila Piatov, Sven Helmer, Anton Dignös, **Fabio Persia**, *Cache-Efficient Sweeping-Based Interval Joins for Extended Allen Relation Predicates*, The VLDB Journal (2021), (2021).

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[12] Daniela D'Auria, **Fabio Persia**, Fabio Bettini, Sven Helmer: *Predicting and Preventing Dangerous Events via Video Surveillance Using a Robotic Platform*, 2019 Third IEEE International Conference on Robotic Computing (IEEE IRC 2019), 549-554, (2019).

12. HOBBIES AND SPARE TIME

In my spare time, I like following soccer, and practicing sports, such as swimming, ski, and soccer.

I also like travelling and interacting with people.

Everything stated is true in accordance with Articles 46 and 47 of Presidential Decree 445/2000.

Date   Signature

18/07/2022