Francesco Betti Sorbelli

Curriculum Vitæ

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Birth	November 14th, 1983
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Short Biography

I received the Bachelor's and Master's degrees *cum laude* in Computer Science from the University of Perugia, Italy, in 2007 and 2010, respectively, and the Ph.D. degree in Computer Science from the University of Florence, Italy, in 2018. From November 2018 to October 2019, I was a Postdoctoral Researcher at the Department of Computer Science, University of Perugia, under the supervision of Prof. Cristina M. Pinotti. From January 2020 to January 2021, I was a Postdoctoral Researcher at the Department of Computer Science, Missouri University of Science and Technology, Rolla, Missouri, USA, under the supervision of Prof. Sajal K. Das. From April 2021 to October 2022, I held a Postdoctoral position at the University of Perugia, again under the supervision of Prof. Pinotti. Since October 2022, I have been a tenure-track Assistant Professor at the University of Perugia, where I was promoted to Associate Professor in 2025. My research interests include algorithm design, combinatorial optimization, and unmanned vehicle systems.

Education

10/2014–03/2018 **Ph.D., Computer Science.** Thesis title: *"Localization of Terrestrial Objects Using a Drone with UWB Antennas"*. Advisor: Cristina M. Pinotti. Dept. of Computer Science and Mathematics, *University of Florence*.
Judgment: ***optimum***.

10/2007–02/2010 **MS, Computer Science.** Thesis title: *"Coloring and Routing in Wireless Sensor Networks"*. Advisor: Cristina M. Pinotti. Dept. of Computer Science and Mathematics, *University of Perugia*.
Final mark: ***110/110 cum laude***.

10/2003–05/2007 **BS, Computer Science.** Thesis title: *"Asynchronous Training in Wireless Sensor Networks: Two Level Algorithm and Cooperative Approach"*. Advisor: Ferruccio Barsi. Dept. of Computer Science and Mathematics, *University of Perugia*.
Final mark: ***110/110 cum laude***.

Qualifications

10/2022–now **National Scientific Qualification.** As **Associate Professor** in the Italian higher education system for the disciplinary field of 01/B1 – *Informatics*.

Work Experience

Research Positions

10/2025–now **Associate Professor.** Dept. of Computer Science and Mathematics, *University of Perugia*.
Responsibilities: Writing project proposals, research activities, teaching courses.

10/2022–2025 **Tenure-track Assistant Professor.** Dept. of Computer Science and Mathematics, *University of Perugia*.
Tutor: Osvaldo Gervasi.
Responsibilities: Writing project proposals, research activities, teaching courses.

04/2021–10/2022 **Post-doctoral researcher.** Dept. of Computer Science and Mathematics, *University of Perugia*. Advisor: Cristina M. Pinotti. Project title: *HALY-ID: HALYomorpha halys IDentification*. Funded by: ICT-AGRI-FOOD. Responsibilities: Investigate the use of drones in detecting the *Halyomorpha halys* bug in orchards.

01/2020–01/2021 **Post-doctoral researcher.** Dept. of Computer Science, *Missouri University of Science and Technology*, Rolla, Missouri, USA. Advisor: Sajal K. Das.
Responsibilities: Devise efficient algorithms for precision agriculture, localization of sensors, and delivery of goods; Mentor undergraduate students; Assist classes, give lectures, and grade students.

11/2018–10/2019 **Post-doctoral researcher.** Dept. of Computer Science and Mathematics, *University of Perugia*. Advisor: Cristina M. Pinotti. Project title: *NALP-SAPR: Navigazione Autonoma e Localizzazione Precisa per Sistemi Aeromobili a Pilotaggio Remoto*. Funded by: POR UMBRIA FSE 2014-2020.
Responsibilities: Devise efficient algorithms for accurate localization and flights of drones.

Teaching Positions

2025–2026 **Lecturer.** Ph.D. Course "**Advanced Applications of Unmanned Vehicles in Emerging Technologies**" (INF/01; 3 CFU, 18 hours), XLI-cycle, Computer Science, Dept. of Computer Science and Mathematics, *University of Florence*.

Lecturer. Undergraduate Course "**Software Engineering**" (INF/01; 6 CFU, 42 hours), L-31, Computer Science, Dept. of Computer Science and Mathematics, *University of Perugia*.

Lecturer. Undergraduate Course "**Algorithms and Data Structures**" (INF/01; 6 CFU, 42 hours), L-P03, Computer Science, Dept. of Computer Science and Mathematics, *University of Perugia*.

Lecturer. Undergraduate Course "**Programming I**" (INF/01; 6 CFU, 42 hours), L-P03, Computer Science, Dept. of Computer Science and Mathematics, *University of Perugia*.

2024–2025 **Lecturer.** Ph.D. Course "**Advanced Applications of Unmanned Vehicles in Emerging Technologies**" (INF/01; 3 CFU, 18 hours), XL-cycle, Computer Science, Dept. of Computer Science and Mathematics, *University of Florence*.

Lecturer. Undergraduate Course "**Software Engineering**" (INF/01; 6 CFU, 42 hours), L-31, Computer Science, Dept. of Computer Science and Mathematics, *University of Perugia*.

Lecturer. Undergraduate Course "**Algorithms and Data Structures**" (INF/01; 6 CFU, 42 hours), L-P03, Computer Science, Dept. of Computer Science and Mathematics, *University of Perugia*.

Lecturer. Undergraduate Course "**Programming I**" (INF/01; 6 CFU, 42 hours), L-P03, Computer Science, Dept. of Computer Science and Mathematics, *University of Perugia*.

Co-Lecturer. Undergraduate Course "**Algorithms and Data Structures with Lab: part II**" (INF/01; 10 hours), L-31, Computer Science, Dept. of Computer Science and Mathematics, *University of Perugia*.

2023–2024 **Lecturer.** Undergraduate Course "**Algorithms and Data Structures**" (INF/01; 6 CFU, 42 hours), L-P03, Computer Science, Dept. of Computer Science and Mathematics, *University of Perugia*.

Lecturer. Undergraduate Course "**Programming I**" (INF/01; 6 CFU, 42 hours), L-P03, Computer Science, Dept. of Computer Science and Mathematics, *University of Perugia*.

Co-Lecturer. Undergraduate Course "**Algorithms and Data Structures with Lab: part II**" (INF/01; 10 hours), L-31, Computer Science, Dept. of Computer Science and Mathematics, *University of Perugia*.

2022–2023 **Co-Lecturer.** Undergraduate Course "**Algorithms and Data Structures with Lab: part II**" (INF/01; 10 hours), L-31, Computer Science, Dept. of Computer Science and Mathematics, *University of Perugia*.

Lecturer. Course "**Operating Systems and BASH Programming**" (45 hours), ITS, Higher Technical Institute.

Lecturer. Undergraduate Course "**Coding, Big Data, and Artificial Intelligence**" (INF/01; 6 CFU, 36 hours), L-14, Jurisprudence, Dept. of Law, *University of Perugia*.

2021–2022 **Adjunct Professor.** Undergraduate Course "**Informatics**" (INF/01; 6 CFU, 36 hours), L-14, Jurisprudence, Dept. of Law, *University of Perugia*.

2020–2021 **Adjunct Professor.** Undergraduate Course "**Informatics**" (INF/01; 6 CFU, 36 hours), L-14, Jurisprudence, Dept. of Law, *University of Perugia*.

2014–2015 **Tutor.** Undergraduate Course "**Informatics** I" (INF/01; 6 CFU, 14 hours), L-35, Mathematics, Dept. of Computer Science and Mathematics, *University of Perugia*.

2007–2008 **Tutor.** Undergraduate Course "**Algorithms and Data Structures II**" (INF/01; 6 CFU, 30 hours), L-31, Computer Science, Dept. of Computer Science and Mathematics, *University of Perugia*.

2018–NOW **Teaching Assistant.** Undergraduate Course "**Algorithms and Data Structures**", L-31, Computer Science, Dept. of Computer Science and Mathematics, *University of Perugia*. *Expert in the field*. Assisting exams.

Industry

05/2013–08/2014	**Programmer.** Klimser/IBM Italy, Siena. Full stack developer at the Monte dei Paschi bank.
11/2012–04/2013	**Sysadmin.** Elektron, Bastia Umbra. Coding and configuration of virtual machines.
10/2011–11/2012	**Web developer.** NewComWeb, Ponte San Giovanni, Perugia. Realization of websites.
09/2010–10/2011	**Programmer.** Conesi/IBM Italy, Siena. Backend coding at the Monte dei Paschi bank.
05/2010–07/2010	**Web developer.** Media Division, Perugia. Search Engine Optimization of websites.
05/2010	**Sysadmin.** DesktopSrl, Ellera. Configuration of virtual machines.

Current Research Lines

My research encompasses various drone and unmanned vehicle applications across different domains. In sensor localization, I explored range-based and range-free algorithms, leveraging flying anchors and Ultra-Wideband (UWB) devices for accurate and scalable solutions. In drone delivery, I developed optimal and approximation algorithms for minimizing travel distances in mixed rural-urban areas, incorporating factors like wind effects and hybrid drone-truck systems. In smart agriculture, I addressed irrigation and pest scouting in vineyards and orchards using robots and drones, devising efficient algorithms based on graph models like aisle-graphs. For BVLoS drone flights, I proposed a multi-layered weighted graph model to optimize paths considering safety and connectivity. Additionally, I contributed to applications such as drone-based video monitoring, disaster response using learning algorithms, and countering jamming and spoofing threats.

Research Publications

Editorial Contributions

[e3] **F. Betti Sorbelli**, P. Chatterjee, C. Claudel, and F. Corò, "*Introduction to Special Issue on Applications-Driven UAV Routing and Scheduling Algorithms for Autonomous Transportation Systems – Part II*", In: ACM Journal on Autonomous Transportation Systems, vol. 3, no. 1, Article 1, pp. 1–3, March 2026.
DOI: https://doi.org/10.1145/3759424
(Editorial Introduction to Special Issue; Guest Editors)

[e2] **F. Betti Sorbelli**, P. Chatterjee, C. Claudel, and F. Corò, "*Introduction to Special Issue on Applications-Driven UAV Routing and Scheduling Algorithms for Autonomous Transportation Systems – Part I*", In: ACM Journal on Autonomous Transportation Systems, vol. 2, no. 4, Article 14, pp. 1–3, Dec. 2025.
DOI: https://doi.org/10.1145/3742480
(Editorial Introduction to Special Issue; Guest Editors)

[e1] C. T. Calafate, J. Wubben, **F. Betti Sorbelli**, E. Vinogradov, and J. P. Carvalho, "*Introduction to Special Issue on Multi-UAV-Assisted Wireless Sensor Networks*", In: International Journal of Distributed Sensor Networks, Wiley.
TOC: https://onlinelibrary.wiley.com/doi/toc/10.1155/DSN.si.174494
(Editorial Introduction to Special Issue; Guest Editors)

Journal Articles

[j25] L. Palazzetti, D. Giannetti, A. Verolino, D. A. Grasso, C. M. Pinotti, and **F. Betti Sorbelli**, "*AntPi: A Raspberry Pi Based Edge-Cloud System for Real-Time Ant Species Detection Using YOLO*", In: Elsevier Ecological Informatics, vol. 91, 103383, Nov. 2025.
DOI: https://doi.org/10.1016/j.ecoinf.2025.103383
(Computer Science Applications: Scimago=Q1, Scopus=95th; IF: Scopus=5.058, WOS=3.142)

[j24] **F. Betti Sorbelli**, S. Ghobadi, and C. M. Pinotti, "*Single-and Multi-Depot Optimization for UAV-Based IoT Data Collection in Neighborhoods*", In: ACM Transactions on Sensor Networks, vol. 21, no. 1, pp. 1-30, Apr. 2025.
DOI: https://dl.acm.org/doi/abs/10.1145/3704810
(Computer Networks and Communications: Scimago=Q1, Scopus=75th; IF: Scopus=3.389, WOS=2.253)

[j23] L. Almstedt, **F. Betti Sorbelli**, B. Boom, R. Calvini, E. Costi, A. Dinca, V. Ferrari, D. Giannetti, L. Ichim, A. Kargar, C. Lazar, L. Maistrello, A. Navarra, D. Niederprum, P. Offermans, B. O'Flynn, L. Palazzetti, N. Patelli, C. M. Pinotti, D.

Popescu, A. K. Rangarajan, L. Serghei, A. Ulrici, L. Wolf, D. Zorbas, and L. Zurek, "*A Comprehensive Pest Monitoring System for Brown Marmorated Stink Bug*", In: IEEE Transactions on AgriFood Electronics, vol. 3, no. 1, pp. 110-120, March-April 2025.
DOI: https://doi.org/10.1109/TAFE.2024.3469538

[j22] L. Almstedt, **F. Betti Sorbelli**, B. Boom, R. Calvini, E. Costi, A. Dinca, V. Ferrari, D. Giannetti, L. Ichim, A. Kargar, C. Lazar, L. Maistrello, A. Navarra, D. Niederprum, P. Offermans, B. O'Flynn, L. Palazzetti, N. Patelli, C. M. Pinotti, D. Popescu, A. K. Rangarajan, L. Serghei, A. Ulrici, L. Wolf, D. Zorbas, and L. Zurek, "*Beyond The Naked Eye: Computer Vision for Detecting Brown Marmorated Stink Bug and Its Punctures*", In: IEEE Transactions on AgriFood Electronics, vol. 3, no. 1, pp. 6-17, March-April 2025.
DOI: https://doi.org/10.1109/TAFE.2024.3429537

[j21] **F. Betti Sorbelli**, P. Chatterjee, F. Corò, S. Ghobadi, L. Palazzetti, and C. M. Pinotti, "*A Novel Graph-Based Multi-Layer Framework for Managing Drone BVLoS Operations*", In: IEEE Transactions on Network and Service Management, vol. 21, no. 5, pp. 5091-5105, Oct. 2024.
DOI: https://doi.org/10.1109/TNSM.2024.3401175
(Computer Networks and Communications: Scimago=Q1, Scopus=83rd; IF: Scopus=5.502, WOS=4.195)

[j20] D. Giannetti, N. Patelli, L. Palazzetti, **F. Betti Sorbelli**, C. M. Pinotti, and L. Maistrello, "*First use of unmanned aerial vehicles to monitor Halyomorpha halys and recognize it using Artificial Intelligence*", In: Wiley Pest Management Science, vol. 80, no. 8, pp. 4074-4084, Aug. 2024.
DOI: https://doi.org/10.1002/ps.8115
(Insect Science: Scimago=Q1, Scopus=95th; IF: Scopus=4.85, WOS=4.845)

[j19] **F. Betti Sorbelli**, F. Corò, S. K. Das, L. Palazzetti, and C. M. Pinotti, "*Drone-based Bug Detection in Orchards with Nets: A Novel Orienteering Approach*", In: ACM Transactions on Sensor Networks, vol. 20, no. 3, pp. 1-28, Apr. 2024.
DOI: https://doi.org/10.1145/3653713
(Computer Networks and Communications: Scimago=Q1, Scopus=75th; IF: Scopus=3.389, WOS=2.253)

[j18] **F. Betti Sorbelli**, "*UAV-Based Delivery Systems: a Systematic Review, Current Trends, and Research Challenges*", In: ACM Journal on Autonomous Transportation Systems, vol. 1, no. 3, pp. 1-40, Sept. 2024.
DOI: https://doi.org/10.1145/3649224

[j17] A. Khochare, **F. Betti Sorbelli**, Y. Simmhan, and S. K. Das, "*Improved Algorithms for Co-scheduling of Edge Analytics and Routes for UAV Fleet Missions*", In: IEEE/ACM Transactions on Networking, vol. 32, no. 1, pp. 17-33, Feb. 2024.
DOI: https://doi.org/10.1109/TNET.2023.3277810
(Computer Networks and Communications: Scimago=Q1, Scopus=87th; IF: Scopus=4.371, WOS=3.56)

[j16] **F. Betti Sorbelli**, A. Navarra, L. Palazzetti, C. M. Pinotti, and G. Prencipe, "*Wireless IoT Sensors Data Collection Reward Maximization by Leveraging Multiple Energy- and Storage-Constrained UAVs*", In: Elsevier Journal of Computer and System Sciences, vol. 139, pp. 103475, 2024.
DOI: https://doi.org/10.1016/j.jcss.2023.103475
(General Computer Science: Scimago=Q2, Scopus=56th; IF: Scopus=1.292, WOS=1.023)

[j15] **F. Betti Sorbelli**, L. Palazzetti, and C. M. Pinotti, "*YOLO-based Detection of Halyomorpha halys in Orchards Using RGB Cameras and Drones*", In: Elsevier Computers and Electronics in Agriculture, vol. 213, pp. 108228, 2023.
DOI: https://doi.org/10.1016/j.compag.2023.108228
(Computer Science Applications: Scimago=Q1, Scopus=95th; IF: Scopus=8.045, WOS=5.565)

[j14] **F. Betti Sorbelli**, F. Corò, S. K. Das, C. M. Pinotti, and A. Shende, "*Dispatching Point Selection for a Drone-Based Delivery System Operating in a Mixed Euclidean-Manhattan Grid*", In: Springer Annals of Operations Research, vol 351, no. 1, pp. 203–222, 2025.
DOI: https://doi.org/10.1007/s10479-023-05458-4
(Management Science and Operations Research: Scimago=Q1, Scopus=82nd; IF: Scopus=4.549, WOS=4.854)

[j13] C. Qu, **F. Betti Sorbelli**, R. Singh, P. Calyam, and S. K. Das, "*Environmentally-Aware and Energy-Efficient Multi-Drone Coordination and Networking for Disaster Response*", In: IEEE Transactions on Network and Service Management, vol. 20, no. 2, pp. 1093-1109, 2023.
DOI: https://doi.org/10.1109/TNSM.2023.3243543
(Computer Networks and Communications: Scimago=Q1, Scopus=83rd; IF: Scopus=5.502, WOS=4.195)

[j12] **F. Betti Sorbelli**, F. Corò, L. Palazzetti, C. M. Pinotti, and G. Rigoni, "*How the Wind Can Be Leveraged for Saving Energy in a Truck-Drone Delivery System*", In: IEEE Transactions on Intelligent Transportation Systems, vol. 24, no. 4, pp. 4038-4049, 2023.

DOI: https://doi.org/10.1109/TITS.2023.3234627
(Computer Science Applications: Scimago=Q1, Scopus=96th; IF: Scopus=9.722, WOS=6.319)

[j11] **F. Betti Sorbelli**, G. Rigoni, and C. M. Pinotti, "*On the Evaluation of a Drone-Based Delivery System on a Mixed Euclidean-Manhattan Grid*", In: IEEE Transactions on Intelligent Transportation Systems, vol. 24, no. 1, pp. 1276-1287, 2023.
DOI: https://doi.org/10.1109/TITS.2022.3189948
(Computer Science Applications: Scimago=Q1, Scopus=96th; IF: Scopus=9.722, WOS=6.319)

[j10] **F. Betti Sorbelli**, F. Corò, S. K. Das, L. Palazzetti, and C. M. Pinotti, "*On the Scheduling of Conflictual Deliveries in a Last-mile Delivery Scenario with Truck-carried Drones*", In: Elsevier Pervasive and Mobile Computing, vol. 87, pp. 101700, 2022.
DOI: https://doi.org/10.1016/j.pmcj.2022.101700
(Computer Networks and Communications: Scimago=Q1, Scopus=90th; IF: Scopus=4.265, WOS=2.725)

[j9] **F. Betti Sorbelli**, S. Carpin, F. Corò, S. K. Das, A. Navarra, and C. M. Pinotti, "*Speeding up Routing Schedules on Aisle Graphs With Single Access*", In: IEEE Transactions on Robotics, vol. 38, no. 1, pp. 433-447, 2022.
DOI: https://doi.org/10.1109/TRO.2021.3082021
(Computer Science Applications: Scimago=Q1, Scopus=98th; IF: Scopus=12.738, WOS=6.123)

[j8] **F. Betti Sorbelli**, C. M. Pinotti, S. Silvestri, and S. K. Das, "*Measurement Errors in Range-Based Localization Algorithms for UAVs: Analysis and Experimentation*", In: IEEE Transactions on Mobile Computing, vol. 21, no. 4, pp. 1291-1304, 2022.
DOI: https://doi.org/10.1109/TMC.2020.3020584
(Computer Networks and Communications: Scimago=Q1, Scopus=95th; IF: Scopus=6.272, WOS=5.112)

[j7] **F. Betti Sorbelli**, F. Corò, S. K. Das, and C. M. Pinotti, "*Energy-Constrained Delivery of Goods With Drones Under Varying Wind Conditions*", In: IEEE Transactions on Intelligent Transportation Systems, vol. 22, no. 9, pp. 6048-6060, 2021.
DOI: https://doi.org/10.1109/TITS.2020.3044420
(Computer Science Applications: Scimago=Q1, Scopus=96th; IF: Scopus=9.722, WOS=6.319)

[j6] **F. Betti Sorbelli**, S. K. Das, C. M. Pinotti, and G. Rigoni, "*A comprehensive investigation on range-free localization algorithms with mobile anchors at different altitudes*", In: Elsevier Pervasive and Mobile Computing, vol. 73, no. 1, pp. 101383, 2021.
DOI: https://doi.org/10.1016/j.pmcj.2021.101383
(Computer Networks and Communications: Scimago=Q1, Scopus=90th; IF: Scopus=4.265, WOS=2.725)

[j5] **F. Betti Sorbelli**, C. M. Pinotti, and V. Ravelomanana, "*Range-Free Localization Algorithm Using a Customary Drone: Towards a Realistic Scenario*", In: Elsevier Pervasive and Mobile Computing, vol. 54, pp. 1-15, 2019.
DOI: https://doi.org/10.1016/j.pmcj.2019.01.005
(Computer Networks and Communications: Scimago=Q1, Scopus=90th; IF: Scopus=4.265, WOS=2.725)

[j4] **F. Betti Sorbelli**, S. K. Das, C. M. Pinotti, and S. Silvestri, "*Range-based Algorithms for Precise Localization of Terrestrial Objects using a Drone*", In: Elsevier Pervasive and Mobile Computing, vol. 48, pp. 20-42, 2018.
DOI: https://doi.org/10.1016/j.pmcj.2018.05.007
(Computer Networks and Communications: Scimago=Q1, Scopus=90th; IF: Scopus=4.265, WOS=2.725)

[j3] P. Perazzo, **F. Betti Sorbelli**, M. Conti, G. Dini, and C. M. Pinotti, "*Drone Path Planning for Secure Positioning and Secure Position Verification*", In: IEEE Transactions on Mobile Computing, vol. 16, no. 9, pp. 2478-2493, 2017.
DOI: https://doi.org/10.1109/TMC.2016.2627552
(Computer Networks and Communications: Scimago=Q1, Scopus=95th; IF: Scopus=6.272, WOS=5.112)

[j2] A. Navarra, C. M. Pinotti, V. Ravelomanana, **F. Betti Sorbelli**, and R. Ciotti, "*Cooperative training for high density sensor and actor networks*", In: IEEE Journal on Selected Areas in Communications, vol. 28, no. 5, pp. 753-763, 2010.
DOI: https://doi.org/10.1109/JSAC.2010.100612
(Computer Networks and Communications: Scimago=Q1, Scopus=99th; IF: Scopus=13.595, WOS=11.42)

[j1] F. Barsi, A. A. Bertossi, **F. Betti Sorbelli**, R. Ciotti, S. Olariu, and M. C. Pinotti, "*Asynchronous Corona Training Protocols in Wireless Sensor and Actor Networks*", In: IEEE Transactions on Parallel and Distributed Systems, vol. 20, no. 8, pp. 1216-1230, 2009.
DOI: https://doi.org/10.1109/TPDS.2008.223
(Hardware and Architecture: Scimago=Q1, Scopus=85th; IF: Scopus=4.531, WOS=2.6)

Conference Papers

[c26] S. Das, P. Das, **F. Betti Sorbelli**, C. M. Pinotti, and P. Chatterjee, "*Analyzing Ground Risks of UAVs Covering Heterogeneous Areas in BVLoS Mission*", In: *7th International Conference on Frontiers in Computing and Systems (COMSYS 2026)*, Mladá Boleslav, Czech Republic, June 24–26, 2026.

[c25] **F. Betti Sorbelli**, P. Das, L. Palazzetti, and C. M. Pinotti, "*Can a Classifier Replace the Human? Box-Level Surrogates for Low-Annotation Object Detection*", In: *22nd International Conference on Distributed Computing in Smart Systems and the Internet of Things (IEEE DCOSS-IoT 2026)*, Reykjavik, Iceland, June 22–24, 2026.
(ICORE: B)

[c24] **F. Betti Sorbelli**, M. Conti, F. Corò, S. Ghobadi, and C. M. Pinotti, "*Energy-Aware Eternal Vertex Cover for UAV-Based Surveillance under Adversarial Edge Attacks*", In: *31st European Symposium on Research in Computer Security (ESORICS 2026)*, Rome, Italy, September 14–18, 2026.
(ICORE: A)

[c23] **F. Betti Sorbelli**, L. Palazzetti, and C. M. Pinotti, "*Outdoor Accuracy Evaluation of DecaWave's DWM1002 PDoA Kit Measurements*", In: *IEEE International Conference on Communications (ICC 2026)*, Glasgow, Scotland, UK, May 24–28, 2026.

[c22] **F. Betti Sorbelli**, P. Das, L. Palazzetti, and C. M. Pinotti, "*EdgeNeXt: A Lightweight Model for UAV-Based Gesture Recognition from Aerial Perspectives*", In: *IEEE International Conference on Communications (ICC 2026)*, Glasgow, Scotland, UK, May 24–28, 2026.

[c21] L. Palazzetti, **F. Betti Sorbelli**, and C. M. Pinotti, "*Let Me Sleep! A Machine Learning Approach for IoT Wake-Up Mechanism for Insect Detection*", In: 2025 8th IEEE International Workshop on Metrology for Agriculture and Forestry (MetroAgriFor), Bologna, Italy, October 28-30, 2025. (**Best paper candidate**).

[c20] **F. Betti Sorbelli**, S. Ghobadi, L. Palazzetti, and C. M. Pinotti, "*Integrating Ground Communication for Extended Drone Visual Line of Sight*", In: 2025 21st IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), pp. 1–6. Marrakech, Morocco, October 20-22, 2025.
DOI: https://doi.org/10.1109/WiMob66857.2025.11257561
(ICORE: B)

[c19] **F. Betti Sorbelli**, S. Ghobadi, L. Palazzetti, and C. M. Pinotti, "*Optimizing the Number of Drones for Aerial Power-Line Maintenance*", In: 2025 21st International Symposium on Algorithmics of Wireless Networks (ALGOWIN), pp. 46–60. Warsaw, Poland, September 15-19, 2025.
DOI: https://doi.org/10.1007/978-3-032-09120-8_4
(ICORE: C)

[c18] **F. Betti Sorbelli**, L. Palazzetti, and C. M. Pinotti, "*A Drone-Based Automated Halyomorpha halys Scouting: A Case Study on Orchard Monitoring*", In: 2023 6th IEEE International Workshop on Metrology for Agriculture and Forestry (MetroAgriFor), pp. 380-385, Pisa, Italy, November 6-8, 2023.
DOI: https://doi.org/10.1109/MetroAgriFor58484.2023.10424287

[c17] **F. Betti Sorbelli**, L. Palazzetti, and C. M. Pinotti, "*Preliminary Results for Halyomorpha halys Monitoring Relying on a Custom Dataset*", In: 2023 6th IEEE International Workshop on Metrology for Agriculture and Forestry (MetroAgriFor), pp. 363-368, Pisa, Italy, November 6-8, 2023.
DOI: https://doi.org/10.1109/MetroAgriFor58484.2023.10424403

[c16] **F. Betti Sorbelli**, A. Navarra, L. Palazzetti, C. M. Pinotti, and G. Prencipe, "*Optimal and Heuristic Algorithms for Data Collection by Using an Energy- and Storage-Constrained Drone*", In: 2022 18th International Symposium on Algorithms for Sensor Systems (ALGOSENSORS), Potsdam, Germany, September, 5-9, 2022.
DOI: https://doi.org/10.1007/978-3-031-22050-0_2
(ICORE: C)

[c15] **F. Betti Sorbelli**, F. Corò, S. K. Das, L. Palazzetti, and C. M. Pinotti, "*Drone-based optimal and heuristic orienteering algorithms towards bug detection in orchards*", In: 2022 IEEE 18th International Conference on Distributed Computing in Sensor Systems (DCOSS), pp. 117-124, Marina Del Rey, California, USA, May 30-June 1, 2022.
DOI: https://doi.org/10.1109/DCOSS54816.2022.00032
(ICORE: B)

[c14] **F. Betti Sorbelli**, F. Corò, S. K. Das, L. Palazzetti, and C. M. Pinotti, "*Greedy Algorithms for Scheduling Package Delivery with Multiple Drones*", In: 2022 ACM 23rd International Conference on Distributed Computing and Networking (ICDCN), pp. 31–39 Virtual, January 4-7, 2022.
DOI: https://doi.org/10.1145/3491003.3491028. (**Best paper award**)

[c13] C. Qu, R. Singh, A. E. Morel, **F. Betti Sorbelli**, P. Calyam, and S. K. Das, "*Obstacle-Aware and Energy-Efficient Multi-Drone Coordination and Networking for Disaster Response*", In: 2021 IEEE 17th International Conference on Network and Service Management (CNSM), pp. 446-454, Virtual, October 25-29, 2021.
DOI: https://doi.org/10.23919/CNSM52442.2021.9615574
(ICORE: B)

[c12] A. Khanda, F. Corò, **F. Betti Sorbelli**, C. M. Pinotti, and S. K. Das, "*Efficient Route Selection for Drone-based Delivery Under Time-varying Dynamics*", In: 2021 IEEE 18th International Conference on Mobile Ad Hoc and Smart Systems (MASS), pp. 437-445, Virtual, October 4-7, 2021.
DOI: https://doi.org/10.1109/MASS52906.2021.00061
(ICORE: B)

[c11] A. Khochare, Y. Simmhan, **F. Betti Sorbelli**, and S. K. Das, "*Heuristic Algorithms for Co-scheduling of Edge Analytics and Routes for UAV Fleet Missions*", In: 2021 IEEE 42nd International Conference on Computer Communications (INFOCOM), pp. 1-10, Virtual, May 10-13, 2021.
DOI: https://doi.org/10.1109/INFOCOM42981.2021.9488740
(ICORE: A++)

[c10] **F. Betti Sorbelli**, F. Corò, S. K. Das, A. Navarra, and C. M. Pinotti, "*Speeding-up Routing Schedules on Aisle-Graphs*", In: 2020 IEEE 16th International Conference on Distributed Computing in Sensor Systems (DCOSS), pp. 69-76, Virtual, June 15-17, 2020.
DOI: https://doi.org/10.1109/DCOSS49796.2020.00023
(ICORE: B)

[c9] **F. Betti Sorbelli**, S. Carpin, F. Corò, A. Navarra, and C. M. Pinotti, "*Optimal Routing Schedules for Robots Operating in Aisle-Structures*", In: 2020 IEEE 37th International Conference on Robotics and Automation (ICRA), pp. 4927-4933, Virtual, May 31-Aug 31, 2020.
DOI: https://doi.org/10.1109/ICRA40945.2020.9197579
(ICORE: B)

[c8] **F. Betti Sorbelli**, C. M. Pinotti, and G. Rigoni. "*Range-free Localization Algorithms with Mobile Anchors at Different Altitudes: A Comparative Study*", In: 2020 ACM 21st International Conference on Distributed Computing and Networking (ICDCN), pp. 1-6, Kolkata, India, January 4-7, 2020 (**Best paper award**).
DOI: https://doi.org/10.1145/3369740.3369766
(ICORE: B)

[c7] L. Bartoli, **F. Betti Sorbelli**, F. Corò, C. M. Pinotti, and A. Shende, "*Exact and Approximate Drone Warehouse for a Mixed Landscape Delivery System*", In: 2019 IEEE 5th International Conference on Smart Computing (SMARTCOMP), pp. 266-273, Washington, DC, USA, June 12-14, 2019.
DOI: https://doi.org/10.1109/SMARTCOMP.2019.00062

[c6] **F. Betti Sorbelli**, S. K. Das, C. M. Pinotti, and S. Silvestri, "*On the Accuracy of Localizing Terrestrial Objects Using Drones*", In: 2018 IEEE International Conference on Communications (ICC), pp. 1-7, Kansas City, MO, USA, May 20-24, 2018.
DOI: https://doi.org/10.1109/ICC.2018.8422375
(ICORE: B)

[c5] **F. Betti Sorbelli**, C. M. Pinotti, and V. Ravelomanana, "*Range-Free Localization Algorithm Using a Customary Drone*", In: 2018 IEEE 4th International Conference on Smart Computing (SMARTCOMP), pp. 9-16, Taormina, Italy, June 18-20, 2018. (**Best paper candidate**).
DOI: https://doi.org/10.1109/SMARTCOMP.2018.00068

[c4] **F. Betti Sorbelli**, S. K. Das, C. M. Pinotti, and S. Silvestri, "*Precise Localization in Sparse Sensor Networks using a Drone with Directional Antennas*", In: 2018 ACM 19th International Conference on Distributed Computing and Networking (ICDCN), pp. 1-10, Varanasi, India, January 4-7, 2018.
DOI: https://doi.org/10.1145/3154273.3154295

[c3] A. Bagchi, **F. Betti Sorbelli**, C. M. Pinotti, and V. Ribeiro, "*Connectivity of a Dense Mesh of Randomly Oriented Directional Antennas Under a Realistic Fading Model*", In: 2015 11th International Symposium on Algorithms for Sensor Systems (ALGOSENSORS), Springer-Verlag, vol. 9536, Patras, Greece, September, 14-18, 2015.
DOI: https://doi.org/10.1007/978-3-319-28472-9_2
(ICORE: C)

[c2] **F. Betti Sorbelli**, R. Ciotti, A. Navarra, M. C. Pinotti, and V. Ravelomanana, "*Cooperative Training in Wireless Sensor and Actor Networks*", In: 2009 6th International ICST Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness (QSHINE), vol. 9, pp. 569–583.

DOI: https://doi.org/10.1007/978-3-642-10625-5_36
(ICORE: C)

[c1] F. Barsi, A. A. Bertossi, **F. Betti Sorbelli**, R. Ciotti, S. Olariu, and C. M. Pinotti, "*Asynchronous Training in Wireless Sensor Networks*", In: 2007 3rd International Workshop on Algorithms for Sensor Systems (ALGOSENSORS), Wroclaw, Poland, pp. 46–57.
DOI: https://doi.org/10.1007/978-3-540-77871-4_6
(ICORE: C)

Workshop and Demo Papers

[w14] P. Das, **F. Betti Sorbelli**, P. Chatterjee, and C. M. Pinotti, "*Urban Roads and Aerial Autonomy: Are Drones Safe Above Busy Roads?*", In: 2025 22nd IEEE International Conference on Mobile Ad-Hoc and Smart Systems (UAV-IoT@MASS), pp. 759–764, Chicago, IL, USA, October 6–8, 2025.
DOI: https://doi.org/10.1109/MASS66014.2025.00124
(ICORE: B)

[w13] **F. Betti Sorbelli**, S. Ghobadi, L. Palazzetti, and C. M. Pinotti, "*Power Line Maintenance Using Multi-Package Collaborative Drone-Truck System*", In: 2025 21st IEEE International Conference on Distributed Computing in Sensor Systems (Wi-DroIT@DCOSS-IoT), pp. 328–335. Lucca, Italy, June 9-11, 2025.
DOI: https://doi.org/10.1109/DCOSS-IoT65416.2025.00061
(ICORE: B)

[w12] **F. Betti Sorbelli**, P. Chatterjee, F. Corò, S. Ghobadi, and C. M. Pinotti, "*Scheduling of Multiple UAVs in BVLoS Operations along Unidirectional and Bidirectional Paths*", In: 2024 49th Annual IEEE Conference on Local Computer Networks (ASDRoNet@LCN), pp. 1-7, Caen, France, October 8-10, 2024.
DOI: https://doi.org/10.1109/LCN60385.2024.10639622
(ICORE: B)

[w11] **F. Betti Sorbelli**, P. Chatterjee, P. Das, and C. M. Pinotti, "*Risk Assessment in BVLoS Operations for UAVs: Challenges and Solutions*", In: 2024 20th IEEE International Conference on Distributed Computing in Sensor Systems (Wi-DroIT@DCOSS-IoT), pp. 300-307, Abu Dhabi, UAE, April 29-May 1, 2024.
DOI: https://doi.org/10.1109/DCOSS-IoT61029.2024.00053
(ICORE: B)

[w10] **F. Betti Sorbelli**, F. Corò, C. M. Pinotti, and A. Shende, "*Exploring Mixed-Grid Environments for Drone-Based Last-Mile Logistics Optimization*", In: 2023 20th IEEE International Conference on Mobile Ad-Hoc and Smart Systems (UAV-IoT@MASS), pp. 634-639, Toronto, Canada, September 25-27, 2023.
DOI: https://doi.org/10.1109/MASS58611.2023.00089
(ICORE: B)

[w9] L. Almstedt, D. Baltieri, **F. Betti Sorbelli**, D. Cattozzi, D. Giannetti, A. Kargar, L. Maistrello, A. Navarra, D. Niederprüm, B. O'Flynn, L. Palazzetti, N. Patelli, L. Piccinini, C. M. Pinotti, L. Wolf, and D. Zorbas, "*Technological Innovations in Agriculture for Scouting Halyomorpha halys in Orchards*", In: 2023 19th IEEE International Conference on Distributed Computing in Sensor Systems (ISIoT@DCOSS-IoT), pp. 702-709, Paphos, Cyprus, June 19-21, 2023.
DOI: https://doi.org/10.1109/DCOSS-IoT58021.2023.00110
(ICORE: B)

[w8] **F. Betti Sorbelli**, P. Chatterjee, F. Corò, L. Palazzetti, and C. M. Pinotti, "*A Novel Multi-Layer Framework for Managing UAV Connectivity and Ground Risk in BVLoS Operations*", In: 2023 42nd IEEE International Conference on Computer Communications (DroneCom@INFOCOM) New York, USA, May 17-20, 2023.
DOI: https://doi.org/10.1109/TNSM.2024.3401175
(ICORE: A*)

[w7] **F. Betti Sorbelli**, F. Corò, S. K. Das, E. Di Bella, L. Maistrello, L. Palazzetti, and C. M. Pinotti, "*A Drone-based Application for Scouting Halyomorpha halys Bugs in Orchards with Multifunctional Nets*", In: 2022 IEEE 20th International Conference on Pervasive Computing and Communications (PerCom Demos@PerCom), pp. 127-129, Pisa, Italy, March 21-25, 2022.
DOI: https://doi.org/10.1109/PerComWorkshops53856.2022.9767309. (**Best demo paper award**)
(ICORE: A*)

[w6] **F. Betti Sorbelli**, M. Conti, C. M. Pinotti, and G. Rigoni, "*UAVs Path Deviation Attacks: Survey and Research Challenges*", In: 2020 IEEE 17th International Conference on Sensing, Communication and Networking (IAUV@SECON), pp. 1-6, Virtual, June 22-25, 2020.
DOI: https://doi.org/10.1109/SECONWorkshops50264.2020.9149780
(ICORE: B)

[w5] **F. Betti Sorbelli**, and C. M. Pinotti, "*Ground Localization with a Drone and UWB Antennas: Experiments on the Field*", In: 2019 IEEE 20th International Symposium on a World of Wireless, Mobile and Multimedia Networks (SwarmNet@WoWMoM), pp. 1-7, Washington, DC, USA, June 10-12, 2019.
DOI: https://doi.org/10.1109/WoWMoM.2019.8793016
(ICORE: B)

[w4] **F. Betti Sorbelli**, F. Corò, C. M. Pinotti, and A. Shende, "*Automated Picking System Employing a Drone*", In: 2019 IEEE 15th International Conference on Distributed Computing in Sensor Systems (Wi-DroIT@DCOSS), pp. 633-640, Santorini, Greece, May 29-31, 2019.
DOI: https://doi.org/10.1109/DCOSS.2019.00115
(ICORE: B)

[w3] **F. Betti Sorbelli**, and C. M. Pinotti, "*On the Localization of Sensors using a Drone with UWB Antennas*", In: 2018 GEOSAFE Workshop on Robust Solutions for Fire Fighting (RSFF), CEUR Workshop Proceedings, vol. 2146, pp. 18-29, L'Aquila, Italy, July 19-20, 2018.
URL: https://ceur-ws.org/Vol-2146/paper72.pdf

[w2] C. M Pinotti, **F. Betti Sorbelli**, P. Perazzo, and G. Dini, "*Localization with Guaranteed Bound on the Position Error using a Drone*", In: 2016 ACM 14th International Symposium on Mobility Management and Wireless Access (MobiWac@MSWIM), pp. 147–154, Malta, November 13-17, 2016.
DOI: https://doi.org/10.1145/2989250.2998178
(ICORE: A)

[w1] F. Barsi, **F. Betti Sorbelli**, R. Ciotti, C. M. Pinotti, A. A. Bertossi, and S. Olariu, "*Asynchronous Training in SANET*", In: 2007 ACM 13th Annual International Conference On Mobile Computing And Networking 2007 (SANET@MobiCom) pp. 43–50. Montreal, Quebec, Canada, September 11 2007.
DOI: https://doi.org/10.1145/1287731.1287740
(ICORE: A*)

Italian Conferences

[i2] **F. Betti Sorbelli**, F. Corò, S. K. Das, L. Palazzetti, and C. M. Pinotti, "*Cooperative Truck-Drone Scheduling Approach for Last-Mile Deliveries*", In: 2021 22nd Italian Conference on Theoretical Computer Science (ICTCS short paper), CEUR Workshop Proceedings, vol. 3072, pp. 40–45, Virtual, September 13-15, 2021.
URL: https://ceur-ws.org/Vol-3072/paper4.pdf

[i1] **F. Betti Sorbelli** and C. M. Pinotti. "*Localization in Sparse Sensor Networks using a Drone with Directional Antennas*". In: 2017 3rd Italian Conference on ICT for Smart Cities and Communities (I-CiTies).

Other

[o5] D. Giannetti, N. Patelli, **F. Betti Sorbelli**, L. Palazzetti, M. C. Pinotti, and L. Maistrello. "*The HALY.ID project: an innovative field data acquisition system based on drones and machine learning to monitor Halyomorpha halys*". In: XXVII Congresso Nazionale Italiano di Entomologia, Palermo, Italy, June 12–16, 2023 (poster).

[o4] L. Maistrello, D. Giannetti, N. Patelli, **F. Betti Sorbelli**, and M. C. Pinotti. "*Do drones affect the behaviour of Halyomorpha halys? Implications for pest monitoring in pear orchards*". In: XII European Congress of Entomology, Heraklion, Crete, Greece, October 16–20, 2023.

[o3] D. Giannetti, N. Patelli, M. C. Pinotti, **F. Betti Sorbelli**, and L. Maistrello. "*Droni & insetti: nuove tecnologie per studiare e gestire gli agroecosistemi*". In: *ENTOMATA*, vol. 19, pp. 43–51, 2023.

[o2] C. Qu, R. Singh, A. E. Morel, **F. Betti Sorbelli**, P. Calyam, and S. K. Das. "*Multi-Drone Coordination and Networking Experiments for Disaster Response*". In: 2021 Aerial Experimentation and Research Platform for Advanced Wireless (AERPAW) (poster).

[o1] **F. Betti Sorbelli**. "*Localization of Terrestrial Objects Using a Drone with UWB Antennas*". Ph.D. Thesis, University of Florence, 2018.
URL: https://flore.unifi.it/retrieve/e398c37d-6319-179a-e053-3705fe0a4cff/thesis.pdf

Open Datasets

[d2] L. Almstedt, **F. Betti Sorbelli**, P. Das, D. Niederprüm, L. Palazzetti, C. M. Pinotti, and L. Wolf. "*Haly.ID: A Multi-year Multi-modal Dataset for Halyomorpha halys (BMSB) Monitoring in Pear Orchards (Italy, 2021–2023)*". Zenodo, Version v1, Dec. 2025.
DOI: https://doi.org/10.5281/zenodo.18045393

[d1] L. Palazzetti, D. Giannetti, A. Verolino, D. A. Grasso, C. M. Pinotti, and **F. Betti Sorbelli**. "*ANTPI: A Raspberry Pi Based Edge-Cloud System for Real-Time Ant Species Detection Using YOLO*". Zenodo, Version v1, Sept. 2025. DOI: https://doi.org/10.5281/zenodo.16740458

Research Impact

- Scopus: **867 citations**, **h-index: 17**.
- Google Scholar: 1,355 citations, h-index: 20.
- ResearchGate: 1,218 citations, h-index: 20.

Funded Projects

National

Principal Investigator (PI) – PRIN 2022 PNRR for the project "*BREADCRUMBS: Building up Robust and Efficient routing Algorithms for Drones by integrating Connectivity and Risk awareness in a Urban air Mobility BVLoS Scenario*".
Total funded: 240.000 EUR (104.000 EUR personal)
Grant code: P2022K7ERB **CUP**: J53D23014990001
Website: https://breadcrumbsprin2022pnrr.github.io

Awards and Travel Grants

Awards

Best paper candidate at the 8th Intl. Workshop on Metrology for Agriculture and Forestry (MetroAgriFor), Bologna, Italy, 2025 , for the paper "*Let Me Sleep! A Machine Learning Approach for IoT Wake-Up Mechanism for Insect Detection*" [21].

Best demo paper award at the 20th Intl. Conf. on Pervasive Computing and Communications (PerCom), online conference, 2022, for the paper "*A Drone-based Application for Scouting Halyomorpha halys Bugs in Orchards with Multifunctional Nets*" [7].

Best paper award at the 23rd Intl. Conf. on Distributed Computing and Networking (ICDCN), online conference, 2022, for the paper "*Greedy Algorithms for Scheduling Package Delivery with Multiple Drones*" [14].

2020 Visiting Scholar Recognition at the Missouri University of Science and Technology, College of Engineering and Computing for my outstanding teaching and service contributions.

Best paper award at the 21st Intl. Conf. on Distributed Computing and Networking (ICDCN), Kolkata, India, 2020, for the paper "*Range-free Localization Algorithms with Mobile Anchors at Different Altitudes: A Comparative Study*" [8].

Best paper candidate at the 4th IEEE Intl. Conf. on Smart Computing (SMARTCOMP), Taormina, 2018, for the paper "*Range-Free Localization Algorithm Using a Customary Drone*" [5].

Travel Grants

2025 **INdAM/GNCS** Funding for Research Projects (PI: Alfredo Navarra, University of Perugia).
2023 **INdAM/GNCS** Funding for Conferences (personal).
2023 **UNIPG** Funding for Mobility/Traveling Projects.
2022 **INdAM/GNCS** Funding for Research Projects (PI: Giuseppe Prencipe, University of Pisa).
2022 **INdAM/GNCS** Funding for Young Researchers (personal).
2020 **INdAM/GNCS** Funding for Research Projects (PI: Alfredo Navarra, University of Perugia).
2019 **INdAM/GNCS** Funding for Conferences, Schools, Workshops, and Seminars (personal).
2017 **INdAM/GNCS** Funding for Young Researchers (personal).

National or International Collaborations

Coordinator at the National Project *BREADCRUMBS: Building up Robust and Efficient routing Algorithms for Drones by integrating Connectivity and Risk awareness in a Urban air Mobility Bvlos Scenario*, Funded by: MUR (PRIN 2022 PNRR).

Participant at the European Project *HALY-ID: HALYomorpha halys IDentification*, Funded by: ICT-AGRI-FOOD (Horizon 2020), and coordinated by Cristina M. Pinotti, Full Professor at the Dept. of Computer Science and Mathematics, University of Perugia.

Member of the *GEAR Lab–Group of rEsearch in Algorithms for emeRgent models*, directed by Cristina M. Pinotti, Full Professor at the Dept. of Computer Science and Mathematics, University of Perugia.

Collaboration with the *UC Merced Robotics Laboratory*, directed by Stefano Carpin, Full Professor at the Dept. of Computer Science and Engineering, University of California, Merced, USA.

Collaboration with the *SPRITZ Lab–Security and Privacy Research Group*, directed by Mauro Conti, Full Professor at the Dept. of Mathematics, University of Padua.

Collaboration with the *DREAM:Lab–Distributed Research on Emerging Applications and Machines*, directed by Yogesh Simmhan, Associate Professor at the Dept. of Computational and Data Sciences, Indian Institute of Science (IISc), Bangalore, India.

Collaboration with the *VIMAN Lab–Virtualization, Multimedia and Networking Lab*, directed by Prasad P. Calyam, Associate Professor at the Dept. of Electrical Engineering and Computer Science, University of Missouri-Columbia, Columbia, Missouri, USA.

Collaboration with the *CReWMaN Lab–Creative Research in Wireless Mobility and Networking*, directed by Sajal K. Das, Professor and Daniel St. Clair Endowed Chair, Dept. of Computer Science, Missouri University of Science and Technology, Rolla, Missouri, USA.

Participant at the National Project *NALP-SAPR: Navigazione Autonoma e Localizzazione Precisa per Sistemi Aeromobili a Pilotaggio Remoto*, Funded by: POR UMBRIA FSE 2014-2020 (24.0k EUR), and directed by Cristina M. Pinotti, Full Professor at the Dept. of Computer Science and Mathematics, University of Perugia.

Participant at the Research Project funded by *Fondazione Cassa di Risparmio di Perugia (Bando 2016)* titled *RISE: un nuovo framework distribuito per data collection, monitoraggio e comunicazioni in contesti di emergency response*, directed by Alfredo Navarra and Cristina M. Pinotti, University of Perugia.

Participant at the *INdAM/GNCS Project 2020* titled *Commesso Viaggiatore 2.0*, directed by Alfredo Navarra (Associate Professor) and Cristina M. Pinotti (Full Professor), Dept. of Computer Science and Mathematics, University of Perugia.

Participant at the *INdAM/GNCS Project 2022* titled *Algoritmi per il controllo distribuito di MIcro e MAcro robots (MIMA)*, directed by Giuseppe Prencipe (Associate Professor), Dept. of Computer Science, University of Pisa.

Participant at the *Department Project 2021–2026* titled *RESIDUAL: RESilient Innovative and Distributed UAvs ALgorithms*, directed by Alfredo Navarra and Cristina M. Pinotti, University of Perugia.

Memberships

04/2021–12/2022	**Volunteer Appointment**, Dept. of Computer Science, *Missouri University of Science and Technology*, Rolla, Missouri, USA.
2019–NOW	**Member**, IEEE.
2020–2023	**Member**, ACM.
2020–NOW	**Member**, Research institution "Consorzio Interuniversitario Nazionale per l'Informatica" (CINI) Group.
2019–NOW	**Member**, Research institution "GRuppo di INformatica" (GRIN) Group.
2016–NOW	**Member**, Research institution (INdAM/GNCS) Group.

Supervision of Students

Ph.D.

(1) **Shafaq Khan**, Dept. of Computer Science and Mathematics, *University of Florence*, Thesis topic about drones and BVLoS flights, from Nov 2023 to May 2024 (co-supervisor).

(2) **Papiya Das**, Dept. of Computer Science and Mathematics, *University of Florence*, Thesis topic about drones and BVLoS flights, from Nov 2023 (co-supervisor).

Master's

(1) **Fabio Bocchini**, Thesis: "*Brown Marmorated Stink Bug: Control and Monitoring with Interactive Dashboards and Computer Vision Algorithms on NVIDIA Jetson*", Dept. of Computer Science and Mathematics, *University of Perugia*, Jul 2024 (supervisor).

(2) **Alessandro Angeletti**, Thesis: *"Analysis of microclimate weather stations data aimed to scouting the brown marmorated stink bug*", Dept. of Computer Science and Mathematics, *University of Perugia*, Sep 2023 (supervisor).

Bachelor's

(1) **Mercelia Kodiele Boucketty Issot**, Thesis: "*Temporal graph and shortest path*", Dept. of Computer Science and Mathematics, *University of Perugia*, Apr 2026 (co-supervisor).

(2) **Stefano Biagini**, Thesis: "*Overview of combinatorial approaches in the use of drones for shipping and package delivery*", Dept. of Computer Science and Mathematics, *University of Perugia*, Apr 2025 (supervisor).

(3) **Samuele Bianchi**, Thesis: "*Drone-based algorithms for a last-mile delivery system on mixed Euclidean-Manhattan metric scenario*", Dept. of Computer Science and Mathematics, *University of Perugia*, May 2022 (co-supervisor).

Visiting Students

(1) **Ahmed Lamiri**, Visiting PhD student from *University of Monastir*, Sep–Dec 2025 (host supervisor).

Periods Abroad

07/2023	**Visit**, at the *Technical University of Braunschweig*, Germany.
03/2023	**Visiting Scholar**, at the *Missouri University of Science and Technology*, Rolla, Missouri, USA.
09/2019–01/2020	**Visiting Scholar**, at the *Missouri University of Science and Technology*, Rolla, Missouri, USA.
04/2018	**Visit**, at the *Université de Corse Pascal-Paoli*, Corte, France.
08/2016–01/2017	**Visiting Scholar**, at the *Missouri University of Science and Technology*, Rolla, Missouri, USA.

Institutional Roles

2025–NOW	**Member of the Doctoral Board**, Ph.D. Program in Computer Science, *University of Camerino*, Italy.
2024–NOW	**Degree Program Quality Assurance Coordinator**, Bachelor's Degree Program in Computer Science, *University of Perugia*.
2025–NOW	**Degree Program Quality Assurance Coordinator**, Professional Bachelor's Degree Program in Computer Science, *University of Perugia*.
2025–NOW	**Erasmus+ and Internationalization Coordinator**, Department of Computer Science and Mathematics, *University of Perugia*.
2025–NOW	**Member of the Departmental Board (Giunta)**, Department of Computer Science and Mathematics, *University of Perugia*.

Academic Responsibilities

Associate Editor

2025–NOW	ACM Journal on Autonomous Transportation Systems (JATS).

Guest Editor

2025	ACM Journal on Autonomous Transportation Systems (JATS), Special Issue on "Navigation for Autonomous Vehicles in Complex and GPS-Denied Environments".
2024	ACM Journal on Autonomous Transportation Systems (JATS), Special Issue on "Applications-Driven UAV Routing and Scheduling Algorithms for Autonomous Transportation Systems".
2024	Wiley International Journal of Distributed Sensor Networks (DSN), Special Issue on "Multi-UAV-Assisted Wireless Sensor Networks".

General Chair

IEEE Intl. Conf. on Distributed Computing in Smart Systems and the Internet of Things (DCOSS-IoT) (2025).

ACM Intl. Workshop on Cost-effective Algorithms for Robots and Drones In Novel AppLications (CARDINAL) (2023).

IEEE Intl. Special Track on Algorithmic Solutions for Drone- and Robot-based Networks (ASDRoNet) (2024)

IEEE Intl. Workshop on Wireless Sensors and Drones in Internet of Things (Wi-DroIT) (2021, 2022).

Workshops Chair

IEEE Intl. Conf. on Distributed Computing in Smart Systems and the Internet of Things (DCOSS-IoT) (2026).

Posters and Demo Chair

IEEE Intl. Conf. on Smart Computing (SMARTCOMP) (2024).

Steering Committee

IEEE Intl. Workshop on Wireless Sensors and Drones in Internet of Things (Wi-DroIT) (2023, 2024, 2025, 2026).

Technical Program Committee Member

IEEE Intl. Conf. on Computer Communications and Networks (ICCCN) (2025).
IEEE Intl. Conf. on Communications (ICC) (2024, 2025).
ACM Intl. Conf. on Distributed Computing and Networking (ICDCN) (2022, 2023, 2024, 2025, 2026).
ACM Intl. Symposium on Mobility Management and Wireless (MobiWac) (2021, 2022, 2023, 2025).
IEEE Intl. Conf. on Sensing, Communication, and Networking (SECON) (2022, 2023).
IEEE Intl. Conf. on Pervasive Computing and Communications (PerCom, Demo/WiP) (2023, 2024, 2025).
IEEE Intl. Conf. on Distributed Computing in Smart Systems and the Internet of Things (DCOSS-IoT) (2023, 2024, 2025, 2026).
IEEE Intl. Conf. on Smart Computing (SMARTCOMP) (2022, 2023, 2024).
IEEE Intl. Conf. on Mobility, Sensing and Networking (MSN) (2022).
IEEE Intl. Conf. on Mobile Ad-Hoc and Smart Systems (MASS) (2024, 2025).
IEEE Intl. Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM) (2021, 2022, 2023, 2024).
ACM Intl. Workshop on Advances in Systems and Computation at the Edge and HPC Networks (ASCENT) (2026).
ACM Intl. Workshop on Emergency Response Technologies and Services (EmeRTeS) (2022, 2023).
ACM Intl. Workshop on Machine Learning and Blockchain for Smart Society (MLBSS) (2022, 2023, 2024, 2025, 2026).
ACM Intl. Workshop on Societal Computing for the Internet of Things & You (SoCIeTY) (2024).
IEEE Intl. Workshop on Internet of Autonomous Unmanned Vehicles (IAUV) (2019, 2020).
IEEE Intl. Workshop on Wireless Sensors and Drones in Internet of Things (Wi-DroIT) (2019).
IEEE Intl. Workshop on Wirelessly Powered Systems and Networks (WPSN) (2020).
IEEE Intl. Workshop on Real-life modeling in 5G/6G networks (REFRESH) (2023).
IEEE Intl. Workshop on Sensors and Smart Cities (SSC) (2022, 2023, 2024, 2025, 2026).
IEEE Intl. Workshop on Unmanned Autonomous Vehicles and IoT (UAV-IoT) (2023, 2024, 2025).
Intl. Conf. on Intelligent Vehicles (ICoIV) (2020, 2022).
Intl. Conf. on Advances in Future (AFIN) (2022, 2023, 2024, 2025, 2026).
Intl. Conf. on Evolving Internet (INTERNET) (2023, 2024, 2025).
Intl. Conf. on Sensor Technologies and Application (SENSORCOMM) (2020, 2022, 2023, 2024, 2025, 2026).
Intl. Conf. on Mechanical, Electronic and Robotic Engineering (Mere) (2021).
Intl. Conf. on Mechatronics and Electrical Engineering (MEEE) (2022, 2023).
Intl. Conf. on Intelligent Sustainable Systems (ICISS) (2024).

Publicity Chair

IEEE Intl. Workshop on Wireless Sensors and Drones in Internet of Things (Wi-DroIT) (2019, 2020).
IEEE Intl. Workshop on Unmanned Autonomous Vehicles and IoT (UAV-IoT) (2023).
IEEE Intl. Workshop on Metrology for Agriculture and Forestry (MetroAgriFor) (2023).
Intl. Symposium on Algorithmics of Wireless Networks (ALGOSENSORS) (2020).

Web Chair

IEEE Intl. Workshop on Wireless Sensors and Drones in Internet of Things (Wi-DroIT) (2020, 2021, 2022).

Reviewer Activity

Ph.D. Thesis

External reviewer for the Ph.D. thesis "*Multi-Agent Systems: New Results for Path Planning and Pattern Formation*", by Sahar Badri, University of L'Aquila, Italy, 2026. Advisors: Professor Serafino Cicerone and Professor Gabriele Di Stefano.

External examiner for the Ph.D. thesis "*Fixed-Wing UAV System for Aerial Tethered Delivery of Small to Medium Packages*", by Samuel Ord, RMIT University, Melbourne, Australia, 2024. Supervisor: Associate Professor Matthew Marino. Official nomination and evaluation with honorarium.

International Journals

ACM Transactions on Sensor Networks (TOSN), IEEE/ACM Transactions on Networking (TON), IEEE Access, IEEE Networking Letters (NL), IEEE Sensors Journal, IEEE Systems Journal, IEEE Robotics and Automation Letters (RA-L), IEEE Transactions on Vehicular Technology (TVT), IEEE Transactions on Intelligent Transportation Systems (T-ITS), IEEE Transactions on Mobile Computing (TMC), IEEE Transactions on Emerging Topics in Computational Intelligence (TETCI), IEEE Transactions on Network Science and Engineering (TNSE), Elsevier Ad Hoc Networks (ADHOC), Elsevier Future Generation Computer Systems (FGCS), Elsevier Computer Communications (COMCOM), Elsevier Computer Networks (COMNET), Elsevier Expert Systems with Applications (ESWA), Elsevier Pervasive and Mobile Computing (PMC), Elsevier Theoretical Computer Science (TCS), Elsevier Journal of King Saud University (JKSU-CIS), Springer Applied Network Science (ANS), Operations Research and Decisions (ORD), Journal of Agricultural Engineering (JAE), ITU Journal on Future and Evolving Technologies (ITU J-FET).

International Conferences and Workshops

AAMAS (2021, 2023), ACM EmeRTeS (2020), ACM ICDCN (2020), ACM MobiWac (2018, 2019), ACM 6G-ABS (2021), ACM KDD (2022), IEEE CASE (2021), IEEE WCNC (2021), IEEE PerCom (2021), IEEE COMSNETS (2020), IEEE ICNP (2021), IEEE MetroAgriFor (2023, 2025), IEEE DCOSS (2019, 2020, 2021), IEEE GLOBECOM (2019, 2020), IEEE ICNC (2018), IEEE ICDCS (2022), IEEE ISCC (2026), IEEE INFOCOM (2019, 2020, 2021, 2023, 2024), IEEE SMARTCOMP (2020), IEEE Wi-DroIT (2019, 2020), IEEE WIFS (2018), IEEE WoWMoM (2018, 2020), IEEE LCN (2023), AIxSET (2025), ITASEC25 (2025), CALDAM (2023), GECON (2021), GPC (2019), ALGOSENSORS (2020).

Talks, Seminars, and Dissemination

Presentations at Conferences and Workshops

10/2025 Presentation at the 21st IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), Marrakech, Morocco, 2025, for the conference paper "*Integrating Ground Communication for Extended Drone Visual Line of Sight*" [20].

10/2024 Presentation at the 49th IEEE Conference on Local Computer Networks (ASDRoNet@LCN), Caen, Normandy, France, 2024, for the special track paper "*Scheduling of Multiple UAVs in BVLoS Operations Along Unidirectional and Bidirectional Paths*" [12].

04/2024 Presentation at the 20th IEEE International Conference on Distributed Computing in Sensor Systems (Wi-DroIT@DCOSS-IoT), Abu Dhabi, UAE, 2024, for the workshop paper "*Risk Assessment in BVLoS Operations for UAVs: Challenges and Solutions*" [11].

11/2023 Presentation at the 5th IEEE International Workshop on Metrology for Agriculture and Forestry (MetroAgriFor), Pisa, 2023, for the workshop paper "*Preliminary Results for Halyomorpha halys Monitoring Relying on a Custom Dataset*" [17].

06/2023 Presentation at the 19th IEEE International Conference on Distributed Computing in Sensor Systems (ISIoT@DCOSS-IoT), Paphos, Cyprus, 2023, for the workshop paper "*Technological Innovations in Agriculture for Scouting Halyomorpha halys in Orchards*" [9].

05/2023 Presentation at the 42nd IEEE International Conference on Computer Communications (DroneCom@INFOCOM), online conference, 2023, for the workshop paper "*A Novel Multi-Layer Framework for Managing UAV Connectivity and Ground Risk in BVLoS Operations*" [8].

03/2022 Presentation at the 20th IEEE International Conference on Pervasive Computing and Communications (PerCom Demos@PerCom), online conference, 2022, for the demonstration paper "*A Drone-based Application for Scouting Halyomorpha halys Bugs in Orchards with Multifunctional Nets*" [7]. (**Best demo paper award**).

06/2020 Presentation at the 16th IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS), online conference, 2020, for the paper "*Speeding-up Routing Schedules on Aisle-Graphs*" [10].

10/2019 Presentation at the Science, Technology and Human Rights Conference (AAAS), Washington, DC, USA, 2019, for the talk "*Monitoring human rights in conflict: The use of drones is still a chimera*".

06/2019 Presentation at the 5th IEEE International Conference on Smart Computing (SMARTCOMP), Washington, DC, USA, 2019, for the paper "*Exact and Approximate Drone Warehouse for a Mixed Landscape Delivery System*" [7].

06/2019 Presentation at the 20th IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (SwarmNet@WoWMoM), Washington, DC, USA, 2019, for the paper "*Ground Localization with a Drone and UWB Antennas: Experiments on the Field*" [5].

05/2019 Presentation at the 15th IEEE International Conference on Distributed Computing in Sensor Systems (Wi-DroIT@DCOSS), Santorini, Greece, 2019, for the paper "*Automated Picking System Employing a Drone*" [4].

07/2018 Presentation at the GEO-SAFE Workshop on Robust Solutions for Fire Fighting (RSFF), L'Aquila, Italy, 2018, for the paper "*On the Localization of Sensors using a Drone with UWB Antennas*" [3].

06/2018 Presentation at the 4th IEEE International Conference on Smart Computing (SMARTCOMP), Taormina, 2018, for the paper "*Range-Free Localization Algorithm Using a Customary Drone*" [5]. (**Best paper candidate**).

01/2018 Presentation at the 19th ACM International Conference on Distributed Computing and Networking (ICDCN), Varanasi, India, 2018, for the paper "*Precise Localization in Sparse Sensor Networks using a Drone with Directional Antennas*" [4].

03/2017 Presentation at the 3rd Italian Conference on ICT for Smart Cities & Communities (I-CiTies), Bari, 2017, for the work "*Localization in Sparse Sensor Networks using a Drone with Directional Antennas*" [1].

Seminars and Lectures

02/2026 **Presentation** at the "2026 General INdAM/GNCS Group Meeting", Rimini. Title: "*Integrating Ground Communications for EVLoS Drone Operations*".

04/2024 **Presentation** at the 20th IEEE International Conference on Distributed Computing in Sensor Systems (Wi-DroIT), Abu Dhabi, UAE, 2024, for the invited talk "*A Comprehensive Pest Monitoring System for Brown Marmorated Stink Bug*".

07/2023 **Presentation** at the *Technical University of Braunschweig*, Germany. Title: "*Smart Agriculture Applications by Leveraging Robots/Drones Operating in Aisle-Structures*".

04/2023 **Presentation** at the *University of Pisa*. Title: "*Optimizing Data Collection in IoT Sensor Networks using Drones: The Single-Drone Data-Collection Maximization Problem and Orienteering Aisle-graphs Single-access Problem*".

03/2023 **Seminar** at the *Missouri University of Science and Technology*, Rolla, USA. Title: "*Optimizing Data Collection in IoT Sensor Networks using Drones: The Single-Drone Data-Collection Maximization Problem and Orienteering Aisle-graphs Single-access Problem*".

02/2023 **Presentation** at the "2023 Haly.ID Workshop", Perugia. Title: "*Exploring the Advancements in Real-Time Object Detection: An Insight into DJI Matrice's Application*".

02/2023 **Presentation** at the "2023 Young researchers@DMI", Perugia. Title: "*Optimal and Heuristic Algorithms for Data Collection by Using an Energy- and Storage-Constrained Drone*".

07/2022 **Lecture** in the "Smart Living in the Era of IoT, AI, Data Science and Cybersecurity" Ph.D. course at the *University of Pisa*, held by Sajal K. Das. Title: "*Robots and Drones in Smart Agriculture: Possible Applications*".

06/2022 **Presentation** at the "2022 General INdAM/GNCS Group Meeting", Montecatini Terme. Title: "*Optimal and Approximated Routing Schedules for Robots Operating in Aisle-Structures*".

04/2022 **Lecture** in the "Algorithms and Data Structures" class at the *University of Perugia*. Title: "*How Autonomous Vehicles can be Employed?*".

12/2021 **Lecture** in the "Algorithms and Data Structures" class at the *University of Perugia*. Title: "*Heuristic Algorithms for Co-scheduling of Edge Analytics and Routes for UAV Fleet Missions*".

04/2021 **Lecture** in the "Cyber-Physical Systems" class at the *Missouri University of Science and Technology*, Rolla, USA. Title: "*Unmanned Aerial and Ground Vehicles in Cyber Physical Systems Applications*".

11/2020 **Lecture** in the "Applied Graph Theory" class at the *Missouri University of Science and Technology*, Rolla, USA. Title: "*Random Graphs and Applications*".

11/2020 **Seminar** at the *Missouri University of Science and Technology*, Rolla, USA. Title: "*Optimal and Approximated Routing Schedules for Robots Operating in Aisle-Structures*".

04/2020 **Seminar** at the *Missouri University of Science and Technology*, Rolla, USA. Title: "*Energy-Constrained Delivery of Goods with Drones Under Varying Wind Conditions*".

02/2020 **Seminar** at the *Missouri University of Science and Technology*, Rolla, USA. Title: "*Range-free Localization Algorithms with Mobile Anchors at Different Altitudes: A Comparative Study*".

10/2019 **Seminar** at the *Missouri University of Science and Technology*, Rolla, USA. Title: "*How Autonomous Vehicles can be Employed?*".

05/2017 **Lecture** in the "Algorithms and Data Structures" class at the *University of Perugia*. Title: "*The use of the k-d Trees*".

09/2016 **Seminar** at the *Missouri University of Science and Technology*, Rolla, USA. Title: "*Localization with Guaranteed Bound on the Position Error using a Drone*".

Dissemination events

09/2024 **Sharper 2024** at the *University of Perugia*. Title of discussion: "*Detection of the Asian stink bug with AI and UAVs*".

05/2024 **Haly.ID Demo** in *Carpi, Modena, Italy*.

09/2023 **Sharper 2023** at the *University of Perugia*. Title of discussion: "*How to use drones and artificial intelligence to counteract the infestation of the Asian stink bug in orchards*".

05/2023 **Open Day 2023** at the *University of Perugia*.

Miscellaneous

2021–now **Drone license** A1/A3 Open Sub Category.

2026 Italian University Employees' MTB Championship (short track), **2nd** 🥈 *Veteran A* cat., (4th/25 overall).

2025 Italian University Employees' Road Cycling Champ., **4th** *Veteran A* cat., (21st/120 overall).

Italian University Employees' MTB short track Champ., **2nd** 🥈 *Veteran A* cat., (2nd/28 overall).

2024 Italian University Employees' Road Cycling Champ., **1st** 🥇 *Veteran A* cat., (4th/130 overall).

2023 Italian University Road Cycling Champ., **2nd** 🥈 *Employees* cat.

Italian University Employees' Road Cycling Champ., **2nd** 🥈 *Veteran A* cat., (2nd/108 overall).

2022 Italian University Employees' Road Cycling Champ., **1st** 🥇 *Seniores* cat., (4th/87 overall).