

Federico Corò

Education

2016 - 2019 • **Ph.D. in Computer Science** obtained on November 2019 at the *Gran Sasso Science Institute (GSSI)*, L'Aquila, Italy

2014 - 2016 • **Master Degree in Computer Science** obtained on September 2016 at the *University of Perugia*, Perugia, Italy

2011 - 2014 • **Bachelor Degree in Computer Science** obtained on September 2014 at the *University of Perugia*, Perugia, Italy

Research Positions

Aug 2022 - now • **Post-doctoral researcher** at the Department of Computer Science, University of Perugia, Italy

Feb 2021 - July 2022 • **Post-doctoral researcher** at the Department of Computer Science, Missouri University of Science and Technology, Rolla, United States

Dec 2019 - Nov 2020 • **Post-doctoral researcher** at the Department of Computer Science, Sapienza University of Rome, Italy

Awards

Best paper award at the 23rd International Conference on Distributed Computing and Networking (ICDCN), online conference, 2022, for the paper *Greedy Algorithms for Scheduling Package Delivery with Multiple Drones*

Best demo paper award at the 20th International Conference 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 (Demo Paper)*

Experience in Academic Teaching

Spring 2020 • **Co-lecturer** of *Operating Systems with Lab*, BSc in Computer Science, University of Perugia, Italy

2014 - 2016 • **Teaching Assistant** of *Algorithms and Data Structures*, BSc in Computer Science, University of Perugia, Italy. Responsibilities: I have prepared several lectures and exercises and I supervised student examinations and graded work submissions.

Supervision and Evaluation of Theses

Supervision of Bachelor Theses

2018 • **Co-supervisor** with Pinotti M.C. of the BSc Thesis by Bartoli L., Computer Science, University of Perugia, Italy, on *Drone Delivery System in a Mixed Landscape*

Research Periods in Foreign Institutions

March 2018 • Research collaborations with Prof. Vlady Ravelomanana at the University of Denis Diderot, Paris, France. Leading to publications: [w5]

Academic Responsibilities

Organizational Responsibilities

- **Publicity Chair** at the International Workshop on Cost-effective Algorithms for Robots and Drones In Novel Applications (CARDINAL) 2023
- **Publicity Chair** at the International Workshop on Wireless Sensors and Drones in Internet of Things (Wi-DroIT) 2021-22
- **Publicity Chair** at the 12th International Conference on Algorithms and Complexity (CIAC) 2021
- Student Volunteer at the 28th International Joint Conferences on Artificial Intelligence (IJCAI) 2019
- Student Volunteer at the 17th International Symposium on Experimental Algorithms (SEA) 2018

PC Membership at International Conferences and Workshops

- Symposium on Algorithmics of Wireless Networks (ALGOSENSORS) 2022
- ACM Conference on Knowledge Discovery & Data Mining (KDD) 2022
- International Workshop on Networking Women in Distributed Computing and Networks (NWDCN) 2022
- International Workshop on Emergency Response Technologies and Services (EmerTeS) 2022
- International Conference on Autonomous Agents and Multiagent Systems (AAMAS) 2021-22
- International Joint Conferences on Artificial Intelligence (IJCAI) 2021-22
- International Workshop on Wireless Sensors and Drones in Internet of Things (Wi-DroIT) 2021-22
- International Conference on Sensor Technologies and Applications (SENSORCOMM) 2019-22
- International Conference on Networks and Security (NSEC) 2021
- International Conference on Frontiers of Sensors Technologies (ICFST) 2020-21

Reviewing for international journals

- Journal of Theoretical Computer Science (TCS) 2020-22
- Transactions on Emerging Topics in Computational Intelligence 2022
- IEEE Access 2022
- Peer-to-Peer Networking and Applications (PPNA) 2022
- Pervasive and Mobile Computing (PMC) 2022
- KSII Transactions on Internet and Information Systems 2022
- Transactions on Sensor Networks (TOSN) 2020-21
- Applied Sciences, MDPI 2021
- Operations Research and Decisions 2021
- Transactions on Intelligent Transportation Systems (T-ITS) 2020
- Expert System with Application (ESWA) 2019-20
- Journal of Artificial Intelligence Research (JAIR) 2019

External Conference Reviewer

- INFOCOM'21-22; ICNP'21; SAGT'21; MFCS'21; DCOSS'21; WoWMoM'21; MLIS'20; AAMAS'20; AAAI'20; DSAA'19; IJCAI'19; MOBIWAC'18; ICTCS'18; ICDCN'18

Talks and Seminars

Presentations at Conferences and Workshops

July 2022 • Presentation at the Workshop on Advanced Tools, Programming Languages, and Platforms for Implementing and Evaluating Algorithms for Distributed systems (ApPLIED@PODC), Salerno, Italy. Title: *Drone-Truck Cooperated Delivery Under Time Varying Dynamics*

January 2022 • Presentation at the 23rd International Conference on Distributed Computing and Networking (ICDCN), online conference. Title: *Greedy Algorithms for Scheduling Package Delivery with Multiple Drones (Best paper award)*

- November 2020* • Presentation at the 16th ACM Symposium on QoS and Security for Wireless and Mobile Networks (Q2SWinet), online conference. Title: *A Realistic Model to support Rescue Operations after an Earthquake*
- September 2020* • Presentation at the 22nd Italian Conference on Theoretical Computer Science (ICTCS), online conference. Title: *A Realistic Model to support Rescue Operations after an Earthquake*
- September 2019* • Presentation at the Markets, Algorithms, Prediction and LEarning (MAPLE) workshop, Milano, Italy. Title: *Exploiting Social Influence to Control Elections Based on Scoring Rules*
- September 2019* • Presentation at the 21st Italian Conference on Theoretical Computer Science (ICTCS), Como, Italy. Title: *Models and Algorithms for Election Control Through Influence Maximization*
- August 2019* • Presentation at the 28th International Joint Conference on Artificial Intelligence (IJCAI), Macau, China. Title: *Exploiting Social Influence to Control Elections Based on Scoring Rules*
- June 2019* • Presentation at the 4th Highlights of Algorithms (HALG), Copenhagen, Denmark. Title: *Balancing spreads of influence in a social network*
- August 2018* • Presentation at the 14th International Symposium on Algorithms and Experiments for Wireless Sensor Networks (ALGOSENSORS), Helsinki, Finland. Title: *On the Maximum Connectivity Improvement problem*
- June 2018* • Presentation at the 17th Annual Mediterranean Ad Hoc Networking Workshop (Med-Hoc-Net), Capri, Italy. Title: *Border Effects on Connectivity for Randomly Oriented Directional Antenna Networks*

Seminars

- July 2022* • A lecture I gave in the “Smart Living in the Era of IoT, AI, Data Science and Cybersecurity” Ph.D. course at the University of Pisa, Italy. Title: *UAV Algorithms and Applications: last-mile package delivery*
- March 2022* • A lecture I gave in the “Algorithms and Data Structures” class at the University of Perugia, Italy. Title: *Truck-Drone cooperation for last-mile deliveries: An algorithmic approach*
- February 2022* • Seminar at the Missouri University of S&T, USA. Title: *Optimal and Approximation Algorithms for Multiple Drone-Delivery Scheduling Problem*
- September 2021* • A lecture I gave in the “Applied Graph Theory” class at the Missouri University of S&T, USA. Title: *Truck-Drone cooperation for last-mile deliveries: A graph theory approach*
- March 2021* • A lecture I gave in the “Cyber-Physical Systems” class at the Missouri University of S&T, USA. Title: *UAVs in Cyber-Physical Applications*
- December 2020* • Seminar at the Sapienza University of Rome, Italy. Title: *A Realistic Model to support Rescue Operations after an Earthquake*
- July 2020* • Seminar at the Missouri University of S&T, USA. Title: *Election Control through Social Influence with Unknown Preferences*
- December 2019* • Seminar at the University of Perugia, Italy. Title: *Exploiting Social Influence to Control Opinions in Social Networks*

Publications

Conference Proceedings

- [e1] T. Calamoneri and F. Corò, eds. *Algorithms and Complexity - 12th International Conference, CIAC 2021, Virtual Event, Proceedings*. Vol. 12701. Lecture Notes in Computer Science. Springer, 2021.

International Journals

- [j1] T. Calamoneri, F. Corò, and S. Mancini. “A Realistic Model to Support Rescue Operations After an Earthquake via UAVs”. In: *IEEE Access* 10 (2022), pp. 6109–6125.
- [j2] F. Corò, E. Cruciani, G. D’Angelo, and S. Ponziani. “Exploiting Social Influence to Control Elections Based on Positional Scoring Rules”. In: *Information and Computation*. To appear (2022).
- [j3] M. A. Mehrizi, F. Corò, E. Cruciani, and G. D’Angelo. “Election Control through Social Influence with Voters’ Uncertainty”. In: *Journal of Combinatorial Optimization*. To appear (2022).
- [j4] F. B. 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* 38.1 (2022), pp. 433–447.
- [j5] F. Corò, G. D’Angelo, and Y. Velaj. “Link Recommendation for Social Influence Maximization”. In: *ACM Transactions on Knowledge Discovery from Data* 15.6 (2021), 94:1–94:23.
- [j6] F. B. 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* 22.9 (2021), pp. 6048–6060.
- [j7] F. Corò, G. D’Angelo, and V. Mkrtchyan. “On the Fixed-Parameter Tractability of the Maximum Connectivity Improvement Problem”. In: *Theory of Computing Systems* 64.6 (2020), pp. 1094–1109.
- [j8] F. Corò, G. D’Angelo, and C. M. Pinotti. “Adding Edges for Maximizing Weighted Reachability”. In: *Algorithms (Special Issue on Approximation Algorithms for NP-Hard Problems)* 13.3 (2020), p. 68.
- [j9] F. Corò, G. D’Angelo, and Y. Velaj. “Recommending Links to Control Elections via Social Influence”. In: *Algorithms (Special Issue on Algorithm Engineering - Towards Practically Efficient Solutions to Combinatorial Problems)* 12.10 (2019), p. 207.

International Conferences

- [c1] T. Calamoneri, F. Corò, and S. Mancini. “A Matheuristic for Multi-Depot Multi-Trip Vehicle Routing Problems”. In: *Proceedings of the 14th edition of the Metaheuristics International Conference (MIC)*. To appear. 2022.
- [c2] P. Ranjan, F. Corò, A. Gupta, and S. K. Das. “Securing Federated Learning against Overwhelming Collusive Attackers”. In: *IEEE Global Communications Conference (GLOBECOM)*. To appear. IEEE, 2022.
- [c3] F. B. 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: *Proceedings of the 18th International Conference on Distributed Computing in Sensor Systems (DCOSS)*. To appear. IEEE, 2022.
- [c4] F. B. Sorbelli, F. Corò, S. K. Das, L. Palazzetti, and C. M. Pinotti. “Greedy Algorithms for Scheduling Package Delivery with Multiple Drones”. In: *Proceedings of the 23rd International Conference on Distributed Computing and Networking (ICDCN)*. **Best Paper Award**. ACM, 2022, pp. 31–39.
- [c5] A. Khanda, F. Corò, F. B. Sorbelli, C. M. Pinotti, and S. K. Das. “Efficient Route Selection for Drone-based Delivery Under Time-varying Dynamics”. In: *Proceedings of the 18th IEEE International Conference on Mobile Ad Hoc and Smart Systems (MASS)*. IEEE, 2021, pp. 437–445.
- [c6] R. Becker, F. Corò, G. D’Angelo, and H. Gilbert. “Balancing Spreads of Influence in a Social Network”. In: *Proceedings of the 34th Conference on Artificial Intelligence (AAAI)*. AAAI Press, 2020, pp. 3–10.
- [c7] T. Calamoneri and F. Corò. “A Realistic Model for Rescue Operations after an Earthquake”. In: *Proceedings of the 16th ACM Symposium on QoS and Security for Wireless and Mobile Networks (Q2SWinet)*. Poster in the 23th International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM). ACM, 2020, pp. 123–126.

- [c8] F. Corò, R. Verdecchia, E. Cruciani, B. Miranda, and A. Bertolino. “JTeC: A Large Collection of Java Test Classes for Test Code Analysis and Processing”. In: *Proceedings of the 17th International Conference on Mining Software Repositories (MSR)*. ACM, 2020, pp. 578–582.
- [c9] M. A. Mehrizi, F. Corò, E. Cruciani, and G. D’Angelo. “Election Control Through Social Influence with Unknown Preferences”. In: *Proceedings of the 26th International Computing and Combinatorics Conference (COCOON)*. Vol. 12273. Lecture Notes in Computer Science. Springer, 2020, pp. 397–410.
- [c10] F. B. Sorbelli, S. Carpin, F. Corò, A. Navarra, and C. M. Pinotti. “Optimal Routing Schedules for Robots Operating in Aisle-Structures”. In: *Proceedings of the 2020 IEEE International Conference on Robotics and Automation (ICRA)*. IEEE, 2020, pp. 4927–4933.
- [c11] F. B. Sorbelli, F. Corò, S. K. Das, A. Navarra, and C. M. Pinotti. “Speeding-up Routing Schedules on Aisle-Graphs”. In: *Proceedings of the 16th International Conference on Distributed Computing in Sensor Systems (DCOSS)*. IEEE, 2020, pp. 69–76.
- [c12] L. Bartoli, F. B. Sorbelli, F. Corò, C. M. Pinotti, and A. M. Shende. “Exact and Approximate Drone Warehouse for a Mixed Landscape Delivery System”. In: *Proceedings of the 5th IEEE International Conference on Smart Computing (SMARTCOMP)*. IEEE, 2019, pp. 266–273.
- [c13] F. Corò, E. Cruciani, G. D’Angelo, and S. Ponziani. “Exploiting Social Influence to Control Elections Based on Scoring Rules”. In: *Proceedings of the 28th International Joint Conference on Artificial Intelligence (IJCAI)*. ijcai.org, 2019, pp. 201–207.
- [c14] F. Corò, E. Cruciani, G. D’Angelo, and S. Ponziani. “Vote For Me!: Election Control via Social Influence in Arbitrary Scoring Rule Voting Systems (Extended Abstract)”. In: *Proceedings of the 18th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*. International Foundation for Autonomous Agents and Multiagent Systems, 2019, pp. 1895–1897.
- [c15] F. Corò, G. D’Angelo, and Y. Velaj. “Recommending Links to Maximize the Influence in Social Networks”. In: *Proceedings of the 28th International Joint Conference on Artificial Intelligence (IJCAI)*. ijcai.org, 2019, pp. 2195–2201.
- [c16] F. Corò, G. D’Angelo, and C. M. Pinotti. “On the Maximum Connectivity Improvement Problem”. In: *Proceedings of the 14th International Symposium on Algorithms and Experiments for Wireless Sensor Networks (ALGOSENSORS)*. Vol. 11410. Lecture Notes in Computer Science. Springer, 2018, pp. 47–61.

International Workshops

- [w1] A. Khanda, F. Corò, and S. K. Das. “Drone-Truck Cooperated Delivery Under Time Varying Dynamics”. In: *Proceedings of the 2022 Workshop on Advanced Tools, Programming Languages, and Platforms for Implementing and Evaluating Algorithms for Distributed systems (ApPLIED@PODC)*. To appear. ACM, 2022.
- [w2] P. Ranjan, F. Corò, A. Gupta, and S. K. Das. “Leveraging Spanning Tree to Detect Colluding Attackers in Federated Learning”. In: *Proceedings of the IEEE Conference on Computer Communications Workshops, INFOCOM 2022 - Workshops*. IEEE, 2022, pp. 1–2.
- [w3] F. B. Sorbelli, F. Corò, S. K. Das, E. D. Bella, L. Maistrello, L. Palazzetti, and C. M. Pinotti. “A Drone-based Application for Scouting Halyomorpha halys Bugs in Orchards with Multifunctional Nets”. In: *Proceedings of the 20th IEEE International Conference on Pervasive Computing and Communications Workshops and other Affiliated Events, PerCom 2022 Workshops*. **Best Demo Paper Award**. IEEE, 2022, pp. 127–129.
- [w4] F. B. Sorbelli, F. Corò, C. M. Pinotti, and A. M. Shende. “Automated Picking System Employing a Drone”. In: *Proceedings of the 1st International Workshop on Wireless sensors and Drones in Internet of Things (Wi-DroIT)*. IEEE, 2019, pp. 633–640.
- [w5] A. Bagchi, F. Corò, C. M. Pinotti, and V. Ravelomanana. “Border effects on connectivity for randomly oriented directional antenna networks”. In: *Proceedings of the 17th Annual Mediterranean Ad Hoc Networking Workshop (Med-Hoc-Net)*. IEEE, 2018, pp. 1–8.

Italian Conferences and Workshops

- [i1] F. B. Sorbelli, F. Corò, S. K. Das, L. Palazzetti, and C. M. Pinotti. “Cooperative Truck-Drone Scheduling Approach for Last-Mile Deliveries”. In: *Proceedings of the 22nd Italian Conference on Theoretical Computer Science (ICTCS)*. Vol. 3072. CEUR Workshop Proceedings. CEUR-WS.org, 2021, pp. 40–45.

- [i2] T. Calamoneri and F. Corò. “A Realistic Model for Rescue Operations after an Earthquake”. In: *Proceedings of the 21th Italian Conference on Theoretical Computer Science (ICTCS)*. Vol. 2756. CEUR Workshop Proceedings. CEUR-WS.org, 2020, pp. 28–32.
- [i3] M. A. Mehrizi, F. Corò, E. Cruciani, G. D’Angelo, and S. Ponziani. “Models and Algorithms for Election Control through Influence Maximization”. In: *Proceedings of the 20th Italian Conference on Theoretical Computer Science (ICTCS)*. Vol. 2504. CEUR Workshop Proceedings. CEUR-WS.org, 2019, pp. 97–103.
- [i4] L. Bartoli, F. Corò, C. M. Pinotti, and A. M. Shende. “Drone Delivery System in a Mixed Landscape”. In: *4th Italian Conference on ICT for Smart Cities And Communities (I-Cities)*. 2018.