MICHELE URBANI, PH. D.

Postdoctoral researcher @ University of Trento

michele@didatec.com +39-333-280-2944 mikiurbi.github.io/ mikiurbi

EXPERIENCE

Postdoctoral researcher

University of Trento

Feb 2022 – Ongoing Trento

- Workforce routing optimization: mathematical modelling and algorithm development for logistics optimization in the e-commerce and the service maintenance provisioning
- Collaboration with companies (Delta Informatica, CNP Dolomiti)
- Participation in the European-funded project HelpFood 4.0
- Participation to international scientific conferences
- Supervision of master's thesis projects

Lecturer

University of Trento

Feb 2019 – Ongoing Trento

- Lecturer for the graduate course *Optimization models and algorithms*, 15 hours yearly
- Lecturer for the seminar "Python: from zero to hero", 6 hours yearly

PROJECTS

Indaco

In collaboration with Delta Informatica

- Development of a novel algorithm for three-objective (economic, social, and environmental) optimization
- Routing optimization for a fleet of workers to deliver/pickup parcels

CNP d-Optimizer

In collaboration with CNP-Dolomiti

March 2021 – March 2023

Development of an optimization solution for routing of maintenance technicians in an Energy Saving COmpany (ESCO). Customer relationship management for data collection, and product testing and validation.

Trentino Trasporti Maintenance Scheduler

In collaboration with Trentino Trasporti

Feb 2022 – Sept 2023

I acted as a supervisor and collaborator in the realization of an optimization suite for maintenance scheduling of a fleet of trains.

EDUCATION

Ph.D. in Materials, Mechatronics, and System Engineering

University of Trento (Italy)

Nov 2018 – Dec 2021

D.Sc. in Economics and Business Administration

Lappeenranta Univ. of Technology (Finland)

Nov 2018 – Dec 2021

Thesis title: Maintenance Policies Optimization in the Industry 4.0 Paradigm

M.Sc. in Materials and Production Engineering

University of Trento (Italy)

Sep 2015 - March 2018

STRENGTHS

Hard-working | Passion | Motivation

Optimization models and algorithms | Learning algorithms | Maintenance models | Simulations | Analytics

Python | Dashbords | Data Visualization | Pandas | Numpy | Databases - SQL | Git | Web framework - Flask, Dash

LANGUAGES

Italian ●●●●●

English ●●●●○

PUBLICATIONS

Journal Articles

- A. Bendazzoli, **M. Urbani**, M. Brunelli, and F. Pilati, "A cooperative team orienteering optimisation model and a customised resolution metaheuristic," *Computers & Operations Research*, vol. 163, p. 106 488, 2024, ISSN: 0305-0548. DOI: https://doi.org/10.1016/j.cor.2023.106488.
- **M. Urbani** and F. Pilati, "Multi-objective hyper-heuristics with multi-policy learning for the many-to-many vehicle routing," *Under review*, 2024.
- **M. Urbani**, M. Brunelli, and A. Punkka, "An approach for bi-objective maintenance scheduling on a networked system with limited resources," *European Journal of Operational Research*, vol. 305, no. 1, pp. 101–113, 2023, ISSN: 0377-2217. DOI: https://doi.org/10.1016/j.ejor.2022.05.024.
- **M. Urbani**, G. Gasparini, and M. Brunelli, "A numerical comparative study of uncertainty measures in the Dempster–Shafer evidence theory," *Information Sciences*, vol. 639, p. 119 027, 2023, ISSN: 0020-0255. DOI: https://doi.org/10.1016/j.ins.2023.119027.
- J. Savolainen and **M. Urbani**, "Maintenance optimization for a multi-unit system with digital twin simulation: Example from the mining industry," *Journal of Intelligent Manufacturing*, vol. 32, no. 7, pp. 1953–1973, 2021. DOI: 10.1007/s10845-021-01740-z.
- **M. Urbani**, M. Brunelli, and M. Collan, "A comparison of maintenance policies for multi-component systems through discrete event simulation of faults," *IEEE Access*, vol. 8, pp. 143 654–143 664, 2020. DOI: 10.1109/ACCESS.2020.3014147.

Conference Proceedings

- **M. Urbani** and F. Pilati, "A multi-policy sequence-based selection hyper-heuristic for multi-objective optimization," in *Proceedings of the Companion Conference on Genetic and Evolutionary Computation*, ser. GECCO '23 Companion, Lisbon, Portugal: Association for Computing Machinery, 2023, pp. 415–418, ISBN: 9798400701207. DOI: 10.1145/3583133.3590663.

Book Chapters

- **M. Urbani** and M. Collan, "Additive manufacturing cases and a vision for a predictive analytics and additive manufacturing based maintenance business model," in Springer International Publishing, 2020, pp. 131–148.
- **M. Urbani**, D. Petri, M. Brunelli, and M. Collan, "Maintenance-management in light of manufacturing 4.0," in Springer International Publishing, 2020, pp. 97–111.