Michael Bosello

PhD Student
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⚲*Website*   🎓*Google Scholar*   ⚫*GitHub*

Education

2021–Present **PhD in Automotive for Intelligent Mobility, Department of Computer Science and Engineering**
University of Bologna, Cesena (Italy)
Research Topic: Machine Learning-based battery management | Reinforcement Learning and Autonomous Driving
Supervisor: Prof. Giovanni Pau. Co-Supervisor: Prof. Claudio Rossi

2017–2020 **Computer Science and Engineering (Master's) – 110/110 with Honours**
University of Bologna, Cesena (Italy)
ML-related classes:
o *Machine Learning* – 30/30 with Honours
o *Computer Vision* – 30/30 with Honours
o *Intelligent Robotic Systems* – 30/30 with Honours

2014–2017 **Computer Science and Engineering (Bachelor's) – 100/110**
University of Bologna, Cesena (Italy)

Short Courses

04/2021 **CVML Short Course: Machine Learning and Deep Neural Networks**
2 days   Aristotle University of Thessaloniki (online), Lecturer: Ioannis Pitas
Short course providing an in-depth presentation of Machine Learning and Deep Learning theory with recent advances
http://icarus.csd.auth.gr/spring-cvml-short-course-machine-learning

Master's Thesis

10/2020   **Integrating BDI and Reinforcement Learning: the Case Study of Autonomous Driving**
74 pages Supervisors: Ricci A., Pau G.
`http://amslaurea.unibo.it/21467`

Conference Publications (Peer Reviewed)

09/2021   **Li-Ion Batteries State-of-Charge Estimation Using Deep LSTM at Various Battery Specifications and Discharge Cycles**
6 pages   Kei Long Wong, **Michael Bosello**, Rita Tse, Carlo Falcomer, Claudio Rossi, and Giovanni Pau.
In Proceedings of the Conference on Information Technology for Social Good (GoodIT '21). Association for Computing Machinery, New York, NY, USA
`https://doi.org/10.1145/3462203.3475878`

09/2020 6 pages	**On exploiting Gamification for the Crowdsensing of Air Pollution: a Case Study on a Bicycle-based System** **Bosello M.**, Delnevo G., Mirri S. In Proceedings of the 6th EAI International Conference on Smart Objects and Technologies for Social Good (GoodTechs '20). Association for Computing Machinery, New York, NY, USA `https://doi.org/10.1145/3411170.3411256`
12/2019 6 pages	**Robot Drivers: Learning to Drive by Trial & Error** **Bosello M.**, Tse R., Pau G. IEEE MSN 2019, 15th International Conference on Mobile Ad-hoc and Sensor Networks `https://doi.org/10.1109/MSN48538.2019.00061`

Workshop Publications (Peer Reviewed)

07/2020 20 pages	**From Programming Agents to Educating Agents – A Jason-based Framework for Integrating Learning in the Development of Cognitive Agents** **Bosello M.**, Ricci A. Engineering Multi-Agent Systems. EMAS 2019. Lecture Notes in Computer Science, vol 12058. Springer, Cham `https://doi.org/10.1007/978-3-030-51417-4_9`
06/2019 12 pages	**Comparative Analysis of Blockchain Technologies Under a Coordination Perspective** Ciatto G., **Bosello M.**, Mariani S., Omicini A. Highlights of Practical Applications of Survivable Agents and Multi-Agent Systems. PAAMS 2019. Communications in Computer and Information Science, vol 1047. Springer, Cham `https://doi.org/10.1007/978-3-030-24299-2_7`

Service

2021	**Reviewer** - Network Modeling Analysis in Health Informatics and Bioinformatics Journal. 2 papers reviewed
2021	**TPC Member and Reviewer** - IEEE Consumer Communications and Networking Conference (CCNC) Conference. 4 papers reviewed

Contributions to Conferences

Presented our paper at GoodIT '21, Rome, Italy

Presented our paper at GoodTechs '20, online conference

Presented our paper at IEEE MSN 2019, Shenzhen, China

Presented our paper at EMAS 2019, Montreal, Canada

Attended AAMAS (International Conference on Autonomous Agents and Multi-agent Systems) 2019, Montreal

Research Funding

2021–2024	PhD Scholarship, CEMI Mobility Technology Holding Limited
2020–2021	One-year research grant, University of Bologna.

Work Experience

11/2020–10/2021	**Research fellow**, *University of Bologna*, Interdepartmental Centre for Industrial ICT Research, Cesena (Italy). LiBER project, `https://liberproject.eu/en` ○ Using machine learning techniques to estimate and predict the status of batteries. ○ Leading a small team that works on autonomous driving with both simulated and real 1/10 scale cars, aiming to win the next f1tenth competition. In partnership with the Macao Polytechnic Institute and multiple companies.
08/2020	**Software developer**, *University of Bologna*, Cesena (Italy). Freelance collaborator – Development of software for batteries data acquisition and elaboration. Preparation of a database for batteries' status prediction using ML.
09/2017–11/2017	**Software developer**, *FlashStart (Collini Consulting)*, Cesena (Italy). Part-time job. – FlashStart provides business Web filtering services, Malware blocking, and network management based on DNS blocking. Improved their web application, by adding features and fixing bugs.
03/2017–05/2017	**Software developer**, *FlashStart (Collini Consulting)*, Cesena (Italy). Curricular internship. – Developed the mobile version of their web app.

Supervision & Teaching

Tutoring students of Macao Polytechnic Institute in autonomous driving and the use of machine learning for battery status estimation.

Tutoring students of smart vehicular systems class during their exam projects about autonomous driving.

Held a seminar introducing autonomous driving and reinforcement learning to master's students of smart vehicular systems class.

Held a seminar about the integration of BDI agents and reinforcement learning to master's students of pervasive computing class.

Job-Related Skills

Academic writing	Systematic literature review, LaTeX, Beamer.
Machine learning	Tensorflow, Tensorflow-agents. Hyper-parameter tuning and reward shaping: abilities acquired during research experiences with deep reinforcement learning. Strong theoretical and practical background in DL and RL.
Programming	Clean code and effective programming; advanced design and architectural patterns; distributed and concurrent programming; functional and logic programming. (code quality was stressed during course activities).
Languages	*Python*, Scala, Java, Javascript, C#, Prolog, C, Go (each one used at least in one course or research activity).

Soft Skills

○ *Problem solving and creativity*: abilities exercised in challenging research projects.

○ *Independent work*: I was able to conduct innovative research without asking for help from the supervisor.

○ *Collaboration*: experience of team working in university and research projects.

○ *Team management*: as I was the leader in several significant projects, I gained leadership and organizational skills.

Languages

		Listening	Reading	Speaking	Writing
Italian	Mother Tongue	C2	C2	C2	C2
English	Advanced	C1	C1	B2	C1

According to TOEFL scores