

Claudio Coppola

PhD in Robotics, Machine Learning Expert

London, UK

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Robotics AI researcher. Experienced in AI for Robotics, Computer Vision and Time Series Forecasting. Driving positive change with AI.

For additional information, please consult my LinkedIn profile - linkedin.com/in/clcoppola

Experience

Machine Learning Applied Scientist

Amazon

July 2022 – Current

London, UK

- Orchestrated, developed, and deployed on AWS ML solutions using DeepAR and statistical models for **cost estimation** and **volume forecasting**.
- Scoped projects, defined customer requirements, and led cross-functional teams in defining data requirement acquisition.
- Submitted articles to internal conferences, wrote a literature review on time-series forecasting models, and explored the usage of S4 and LLM for forecasting.
- Took part in the hiring process and mentored interns and new hires.

Postdoctoral Researcher

Queen Mary University of London

May 2019 – June 2022

London, UK

- Team Leader of the EPSRC MAN³ Project in collaboration with *Shadow Robotics*, *Ocado*, and *Deepmind*, advancing dexterous robotic manipulation.
- Conducted research on robot learning by demonstration for robot manipulation by building a *teleoperation platform* and a demonstration segmentation system.
- Developed a robust grasp exploration algorithm using Bayesian Optimization and Unscented Transform for stable and adaptive robotic manipulations.
- Mentored and supported PhD and MSc students in their research projects, fostering a collaborative and innovative research environment.

Lead Data Scientist

Buzzoole

April 2018 – Oct 2018

Napoli, Italy

- Data science team lead. Worked on Machine Learning Projects central to raise \$8.9M funding for the company.
- Trained an Inception-net for object recognition on 20K+ social media images achieving over 80% accuracy.
- Trained an RNN Model for language translation.

Research Associate

University of Lincoln

May 2017 – May 2018

Lincoln, UK

- Developed state-of-the-art Human Activity Recognition and Re-identification systems used in the EU H2020 research projects ENRICHME and FLOBOT.
- Teaching Assistant for courses on Artificial Intelligence and Mobile Robotics.

Other Experiences

- **BrainStation - Instructor** - (Nov 2023-Current): Instructor for the Data Science & AI course. Delivered the Course material to professionals. Advised students on their final project.
- **2Watch - Data Scientist Contractor** - (Jan-Dec 2020): Developed an OCR system extracting information from gaming dashboards.
- **Entrepreneur First - LD11 Cohort Member** - (Oct 2018 – Jan 2019) Took the Role of CTO in the ideation of a new startup, taking part in the process of customer validation, market sizing and product development.
- **KPMG - Business Intelligence Consultant** - (Jan-Jun 2014): Automated daily Business Intelligence (BI) maintenance tasks with a speed-up above 90% and developed SQL queries to generate BI reports.

Technical Skills

- **Machine Learning & AI** - Deep Learning, Bayesian Optimization, Ensemble learning, Self-Supervised Learning, Reinforcement Learning, Kalman/Particle Filters.
- **Frameworks** - ROS, Pytorch, Scikit-learn, Pandas, Streamlit, Docker, React, Kinect SDK2, OpenCV.
- **Methodological** - Computer Vision, Dexterous Manipulation, Machine Learning, Time-Series Forecasting, Control Theory, Software Engineering, Optimization, Scientific writing.

Programming Skills

Proficient: Python, Matlab, SQL.

Experienced: C, C++, C#, Java, Javascript

Education

PhD in Robotics

University of Lincoln

Jul 2014 – Aug 2018

Lincoln, UK

- Built Human Social Activity and interaction recognition systems based on RGB-D data.
- Developed ML models based on a probabilistic multi-modal mixture of Experts (DBMM)
- Associated with the EU H2020 Projects ENRICHME and STRANDS.
- AI: SVM, GMM, Ensemble, Bayesian Nets, Random Forest, Deep Learning, Computer Vision.

MSc cum Laude in Computer Science Engineering

University Federico II of Napoli

Oct 2011 – Dec 2013

Napoli, Italy

- Top 5% Student
- Focus: Computer Vision, Machine Learning, Signal Processing.
- Thesis: *Iris Liveness detection for authentication systems based on Iris Recognition*

BSc in Computer Science Engineering

University Federico II of Napoli

Oct 2011 – Dec 2013

Napoli, Italy

- Top 5% Student
- Thesis: *Algorithm and systems for voice recognition.*
- Focus: Software Engineering, Artificial Intelligence, Control.

Certifications

- **Machine Learning** - Stanford University on Coursera, Prof. Andrew Ng
- **Deep Learning Specialization** [deeplearning.ai](https://www.coursera.org/learn/deeplearning) on Coursera, Prof. Andrew Ng.
- **Deep Reinforcement Learning Nanodegree** Udacity
- **Fundamentals of Reinforcement Learning** University of Alberta on Coursera
- **BMVA Computer Vision Summer School 2015** Swansea University.

Awards

- 2022 **PD Enrichment Awards** - Alan Turing Institute
- 2022 **AI-Net PostDoc Awards** - DAAD
- 2020 **Hult regionals winner** - Hult Foundation
- 2016 **Research Travel Award** - Santander
- 2016 **Research Travel Awards** - EURAI

Publications & Invited Talks

Invited Talks

- "Human Activity Recognition and Monitoring" Symposium of the British Machine Vision Association 2017 (BMVA), London, UK.
- [Learning Human Actions: from Perception to Robot Learning](#), University of Leeds, UK
- [Learning Human Actions: from Perception to Robot Learning](#), University of Lincoln, UK

Journals

- [1] Xompero, A., Donaher, S., Iashin, V., Palermo, F., Solak, G., Coppola, C., ... & Cavallaro, A. (2022). The CORSMAL benchmark for the prediction of the properties of containers. IEEE Access.
- [2] Siddiqui, M. S., Coppola, C., Solak, G., & Jamone, L. (2021). Grasp Stability Prediction for a Dexterous Robotic Hand Combining Depth Vision and Haptic Bayesian Exploration. *Frontiers in Robotics and AI*, 237.
- [3] Coppola, C., Cosar, S., Faria, D., & Bellotto, N. (2019). Social Activity Recognition on Continuous RGB-D Video Sequences. *International Journal of Social Robotics*, 1–15.

Conferences & Workshops

- [4] Dawood A. B., Coppola C. & Althoefer K. (2023). Learning Decoupled Multi-touch Force Estimation, Localization and Stretch for Soft Capacitive E-skin. *IEEE International Conference of Robotics and Automation (ICRA) 2023*
- [5] Coppola C., & Jamone L. (2022). Master of Puppets: Multi-modal Robot Activity Segmentation from Teleoperated Demonstrations. In *2022 IEEE Conference on Development and Learning (ICDL)*.
- [6] Coppola C., Solak G. & Jamone L. (2022). A portable and affordable system for the teleoperation of dexterous robotic hands using Leap Motion hand tracking and vibrotactile feedback. In *2022 31st IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN)*.
- [7] Zenha R., Denoun B., Coppola C. & Jamone L. (2021). Tactile Slip Detection in the Wild Leveraging Distributed Sensing of both Normal and Shear Forces. In *Intelligent Robots and Systems (IROS), 2021 IEEE/RSJ International Conference on*.
- [8] Xompero, A., Donaher, S., Iashin, V., Palermo, F., Solak, G., Coppola, C., ... & Cavallaro, A. (2021). Multi-modal estimation of the properties of containers and their content: survey and evaluation. *arXiv preprint arXiv:2107.12719*.
- [9] Siddiqui, M. S., Coppola, C., Solak, G., & Jamone, L. (2021, September). Discovering Stable Robot Grasps for Unknown Objects in Presence of Uncertainty Using Bayesian Models. In *Annual Conference Towards Autonomous Robotic Systems* (pp. 46-55). Springer, Cham.
- [10] Iashin V. and Palermo F. and Solak G. and Coppola C. (2020). Filling Mass Estimation Using Multi-modal Observations of Human-robot Handovers. *CoRR*, abs/2012.01311.
- [11] Coppola, C., Cosar, S., Faria, D., & Bellotto, N. (2017). Automatic detection of human interactions from RGB-D data for social activity classification. In *2017 26th IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN)* (pp. 871-876).
- [12] Fernandez-Carmona, M., Cosar, S., Coppola, C., & Bellotto, N. (2017). Entropy-based abnormal activity detection fusing RGB-D and domotic sensors. In *2017 IEEE International Conference on Multisensor Fusion and Integration for Intelligent Systems (MFI)* (pp. 42-48).
- [13] Coppola, C., Faria, D., Nunes, U., & Bellotto, N. (2016). Social activity recognition based on probabilistic merging of skeleton features with proximity priors from RGB-D data. In *Intelligent Robots and Systems (IROS), 2016 IEEE/RSJ International Conference on* (pp. 5055–5061).
- [14] Cosar, S., Coppola, C. & Bellotto, N. (2017). Volume-based Human Re-identification with RGB-D Cameras. In *VISIGRAPP (4: VISAPP)* (pp. 389–397).
- [15] Coppola, C., Krajník, T., Duckett, T., & Bellotto, N. (2016). Learning temporal context for activity recognition. In *European Conference on Artificial Intelligence (ECAI2016)*.
- [16] Coppola, C., Mozos, O., Bellotto, N. (2015). Applying a 3d qualitative trajectory calculus to human action recognition using depth cameras. In *IEEE/RSJ IROS Workshop on Assistance and Service Robotics in a Human Environment*.

Peer-Review Work

Actively contributed to the academic community through rigorous peer review for the following prestigious conferences and Journals on Robotics and Machine Learning:

Conferences: IROS; ICRA; ICAR; ICDL; IJCNN; ROMAN;

Journals: Nature Machine Intelligence; Transaction of Robotics; Cognitive Systems Research; IEEE Transactions on Haptics; IEEE RA-L; MDPI Applied Sciences;