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Location: Malaysia

Nationality: Italian

LECTURER | DATA SCIENTIST | QUANTITATIVE RESEARCHER

INTRODUCTION

Lecturer and Data Scientist with over ten years of combined experience in quantitative research, data science education, and applied machine learning. Passionate about transforming complex analytical concepts into engaging, practice-oriented learning experiences. PhD in Causal Machine Learning with a strong record of interdisciplinary teaching and research across statistics, econometrics, and artificial intelligence. Experienced in curriculum design, supervision, and mentoring students from diverse academic and cultural backgrounds. Dedicated to fostering critical thinking, reproducible research practices, and data literacy in the classroom.

Fields of interest: Machine Learning, Econometrics, Probabilistic Modelling, Causal Machine Learning, Incremental Learning Algorithms, Program and Policy Evaluation, Financial Data Modeling, Environmental Analysis, and Extreme-Event Analysis.

ACADEMIC AND PROFESSIONAL EXPERIENCE

Applied Data Science Instructor *Le Wagon, Singapore & Bali | April 2022 – Present*

Delivered intensive courses in Data Science and Machine Learning for international cohorts. Designed and taught modules on Python, SQL, relational databases, data wrangling, supervised/unsupervised learning, and deep learning. Mentored over 100 students in applied data science projects, emphasizing reproducibility, teamwork, and analytical communication.

Guest Editor *IOP Publishing – Environmental Research: Infrastructure and Sustainability | September 2024 – February 2025*

Guest Editor for the Focus Issue “*Big and Granular Data to Assess Infrastructure-related Impacts and Adaptation.*” Responsible for coordinating peer reviews, evaluating submissions, and contributing to the editorial direction of research on geospatial and data-driven methods for climate resilience.

Data Science Consultant *Green Heart Care, Australia | May 2025*

Supervised the design of a machine learning system for analyzing daily caretaker notes to detect potential health or behavioral issues. Guided the team on NLP model selection, data pipeline design, and performance evaluation for text classification. Advised on data governance, ethical AI use, and integration with healthcare reporting workflows.

Data Scientist *PT. Mantra Bali, Indonesia | April 2020 – April 2021*

Developed AI-based monitoring systems for environmental management, including computer-vision models to quantify landfill waste and truck activity in real time.

Data Scientist *Simile, Timor-Leste | February 2020 – January 2021*

Built predictive models for early-warning systems to improve disaster preparedness and resilience. Collaborated with NGOs to refine geospatial alerts for climate-induced events.

Data Scientist *Tripper, Indonesia | July 2019 – August 2019*

Designed and tested crop-yield prediction models using remote sensing and time-series data to support agricultural planning and pricing strategies.

Research and Fieldwork Management *Catholic University of the Sacred Heart, Milan, Italy, and Ipsos, Milan | 2013 – 2018*

Managed large-scale quantitative research and program evaluation projects in collaboration with academic and commercial partners. Supervised data collection operations, ensured methodological rigor, and coordinated multidisciplinary teams across multiple Italian regions.

- **Family St.A.R. Project (2016–2018):** Oversaw national data collection (10,000+ respondents), managed fieldwork teams, and maintained data quality control.
 - **OpenTeQ Project (2017):** Directed interviewer coordination and survey logistics for research on education and social participation.
 - **Family Group Conference Project (2013–2015):** Designed survey instruments and managed fieldwork over three waves (4,000+ cases).
 - **Ipsos (2015–2016):** Contributed to impact assessments of public communication campaigns, handling questionnaire design, translation verification, and quantitative reporting.
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EDUCATION

Doctor of Philosophy (PhD), Causal Machine Learning *Catholic University of the Sacred Heart, Milan, Italy | 2018 – 2022*

Thesis: “*Causal Machine Learning for Program and Policy Evaluation.*”

Explored the application of machine learning techniques for causal inference in program and policy evaluation, addressing limitations of traditional econometric models.

Visiting Researcher *University of Leeds, Leeds, United Kingdom | Nov 2018 – Apr 2019*

Project: “*Analysing the UK Electronic Petition System.*”

Developed a web-based analytical framework integrating socio-demographic data with petition records at the constituency level.

Master of Science in Sociology and Social Research *University of Trento, Trento, Italy | 2015 – 2017*

Thesis: “*The Oregon Health Insurance Experiment: Meeting Health Needs and Accessing Health Care.*”

Applied modern mediation analysis to estimate indirect effects of health-care access using experimental data.

Bachelor of Science in Sociology *University of Milan-Bicocca, Milan, Italy | 2010 – 2014*

Thesis: “*Wellbeing at School: Indications from a Randomised Controlled Trial.*”

Assessed the effects of the *Family Group Conference* program on student well-being through randomized evaluation.

Winter School in Social Network Analysis *Centre for Business Network Analysis, University of Greenwich, London, UK | Jan 8–12, 2018*

Training in statistical network analysis, data visualization with R and Visone, and epidemic modeling using large-scale datasets.

Winter School in Fundamentals and Methods for Impact Evaluation of Public Policies

FBK-IRVAPP, Trento, Italy | Apr 8–13, 2016

Focused on causal inference theory and applied counterfactual methods for policy evaluation.

PUBLICATIONS

Falchetta, G., & Hammad, A. T. (2025). Tracking green space along streets of world cities. *Environmental Research: Infrastructure and Sustainability*.

Hammad, A. T. (2024). A note on treatment effects: we are missing something on the tails. SSRN Working Paper / Pre-print.

Shayegh, S., [...], Hammad, A. T., et al. (2023). Prioritizing COVID-19 vaccine allocation in resource-poor settings: Towards an Artificial-Intelligence-enabled and geospatial-assisted decision-support framework. *PLOS One*.

Hammad, A. T., & Falchetta, G. (2022). Probabilistic forecasting of remotely sensed cropland vegetation health and its relevance for food security. *Science of The Total Environment (STOTEN)*.

Falchetta, G., Noussan, M., & Hammad, A. T. (2021). Comparing paratransit in seven major African cities: An accessibility and network analysis. *Journal of Transport Geography*.

Hammad, A. T., Falchetta, G., & Wirawan, I. B. M. (2021). Back to the fields? Increased agricultural land greenness after a COVID-19 lockdown. *Environmental Research Communications (ERC)*.

Falchetta, G., Hammad, A. T., & Shayegh, S. (2020). Planning universal accessibility to public healthcare in sub-Saharan Africa. *Proceedings of the National Academy of Sciences (PNAS)*. (Featured in Medical Xpress.)

**PRESENTATIONS
& CONFERENCES**

Hammad, A. (2023, April). *Tracking global urban green space trends*. Highlighted presentation, Session ITS1.11-NP0.2, *EGU General Assembly*, Vienna, Austria, 24–28 April 2023.

Hammad, A. (2022, May). *Geospatial analysis for sustainable development*. *EGU General Assembly*, Vienna, Austria. (Co-convenor)

Hammad, A. (2019, September). *A flexible topic modelling approach for electronic petitions*. Presented at the *Poltext Conference*, Tokyo, Japan.

Hammad, A. (2019). *AI for Everyone & Program Evaluation for GOs and NGOs*. *Hubud-Dojo*, Bali, Indonesia.

Argentin, G., Barbetta, G., Hammad, A., Maggioni, M., & Rossignoli, D. (2017, June). *Promuovere la partecipazione dei giovani ad attività di volontariato produce ricadute positive sulla loro socialità e integrazione scolastica?* Presented at the *National Volunteer Conference*, Ancona, Italy.

Barbetta, G., Argentin, G., Hammad, A., & Maci, F. (2016, September). *Aumentare il parental involvement per contrastare l'insuccesso scolastico? Evidenza da una sperimentazione controllata sulle Family Group Conferences*. Presented at the *Annual ESPAnet Conference*, Macerata, Italy.

LANGUAGES

English (Fluent) **Italian** (Native) **Arabic** (Native) **Indonesian** (Basic)