Dr Marco Pelliccia

Applied Economist — Data Science — Risk, Networks & Incentive Design

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PROFESSIONAL SUMMARY

Applied economist and Managing Consultant at SQW, managing projects in economic impact assessment and policy evaluation. Holds a PhD in Economics from Birkbeck, University of London, and has over ten years' experience in economic research and teaching. Combines expertise in microeconomics, game theory and network analysis with quantitative modelling and Python-based data science. Experienced in programme leadership, team coordination and communicating complex economic analysis to varied audiences.

APPLIED DATA SCIENCE PROJECTS

Loan Default Prediction (MIT Capstone) — GitHub Oct 2025

- Built a credit-risk decision prototype for HMEQ home-equity loans, comparing six classifiers to identify borrowers with elevated default risk.
- Selected XGBoost as the strongest held-out model (ROC-AUC 0.964; default recall 0.832; F1 0.814), then optimised the lending threshold to minimise expected losses.
- Used SHAP to translate predictions into explainable risk drivers: debt burden, credit history, loan size, and property variables.

Predicting Potential Customers (MIT Elective) — Portfolio Oct 2025

- Built a lead-prioritisation pipeline for 4,612 ExtraaLearn leads, selecting the contact threshold on validation data before final test evaluation.
- Delivered an operational lead-scoring file with predicted conversion probabilities, priority bands, and recommended outreach actions.
- On the test set, achieved ROC-AUC 0.926 and average precision 0.839; the top 10% of scored leads converted at 91.4%, about 3.1x the base rate.

PROFESSIONAL EXPERIENCE

Managing Consultant Oct 2026 – Present
SQW – Economic and social development consultancy Edinburgh, UK

- Manage consultancy projects focused on economic impact assessment and policy evaluation, coordinating analytical work and project delivery.

Assistant Professor in Economics Apr 2020 – Present
Edinburgh Business School, Heriot-Watt University Edinburgh, UK

- Apply microeconomic theory, policy analysis, and quantitative reasoning in UG/PG teaching, using Python-based case studies to connect formal models to applied decision problems.
- As **Programme Director**, led curriculum modernization of three undergraduate economics programmes, producing clearer learning outcomes and quality-assurance documentation aligned with professional standards.
- Coordinated teaching teams and programme delivery across multiple campuses, maintaining academic standards across planning, workload allocation, and assessment processes.
- Supervise PhD candidates, guiding research projects from methodology design to final thesis delivery.

Assistant Professor in Economics Jan 2016 – Apr 2020
Bangor Business School, Bangor University Bangor, UK

- Designed and delivered microeconomics and game theory courses focused on strategic reasoning, mathematical modelling, and policy applications.
- Supervised student dissertations and produced research-led teaching materials translating formal economic models into applied decision problems.

Senior Teaching Fellow Sept 2014 – Jun 2015
SOAS, University of London London, UK

- Designed and delivered quantitative methods courses, communicating technical material to diverse UG/PG student cohorts.

SKILLS

Programming & Data: Python (pandas, scikit-learn, XGBoost, matplotlib, SHAP), Java, Wolfram Mathematica.
Economics & Statistics: Econometrics, causal inference, game theory, network analysis, behavioural economics, economic modelling.
Tools: MS Office, GitHub, UciNet, Gephi.
Languages: Italian (native), English (fluent), French (fluent), Spanish (fair).

EDUCATION

Applied Data Science Program, MIT Professional Education (Top 1% of cohort). 2025
PhD in Economics (Economics of Networks), Birkbeck, University of London 2016
MSc in Economics, Queen Mary College, University of London 2010
MSc in Economics, University of Siena 2009
BSc in Economics and Finance, Polytechnic University of Marche 2007

SELECTED RESEARCH

Selected research on incentive design, networks, network security, and mechanism design.

- **Too Much Finance: Mechanisms That Harm Growth and Policy Implications** (with A. Daripa and S. Kapur), *The Manchester School*: 1–20. https://doi.org/10.1111/manc.70060 (2026).
- **Incentive Design on Networks** (with A. Daripa and S. Kapur), SSRN 4312506 (2022).
- **Network Structures and Credit Rating** (with A. Daripa and S. Kapur), SSRN 3446432 (2019).
- **Decentralized Defence of a (Directed) Network Structure**, *Defence and Peace Economics*, 2020.
- **Centrality in Trade Networks and Investment in Security**, (with V. Bove, and L. Elia), *Peace Economics, Peace Science and Public Policy* 2016.

AWARDS & PROFESSIONAL DEVELOPMENT

- **Academic Excellence Award**, Birkbeck College (Top of PhD cohort).
- **Excellence in Teaching Award**, Birkbeck College.
- **ARS'11 Master Thesis Award**.
- **Professional development**: Cambridge-INET and HCEO-Chicago Summer School (2014); Fundamentals of Teaching; Social Learning and Policy Design; Associate Fellow of the Higher Education Academy.