Prof. Antonio Liotta

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Academic career & positions

Full Professor	Free University of Bozen-Bolzano, Italy (Sept´20 – present)
Full Professor	Edinburgh Napier University, UK (Jun´19 – Aug´20)
Full Professor	University of Derby, UK (Dec´17 – Jun´19)
Full Professor	Eindhoven University of Technology, NL (Oct´08 – Dec´17)
Associate Professor	University of Essex, UK (Feb´05 – Sept´08)
Assistant Professor	University of Surrey, UK (Feb´01 – Jan´05)
Research Fellow	University of Surrey, UK (Jan 2000 – Jan 2001)
PhD student	University College London, UK (1997 – 2001)

Brief presentation of research and main results

Career: Currently Full Professor of Data Science and Machine Learning (Italian National Scientific Qualifications 09H1 Computer Engineering, 01B1 Informatics, and 09F2 Telecommunications). He has been serving the following roles: Coordinator of the PhD in Computer Science (March'23-March'25); Scientific Coordinator of the macro area D2AI (data-driven Artificial Intelligence); and co-coordinator for the Master in Data Analytics for Economics and Management. Teaching Data Science and Machine Learning at BSc and MSc.

Antonio's passion for *artificial intelligence*, has driven his academic career throughout Europe. After majoring his master´s degree with a thesis in *artificial vision* (University of Pavia, 1994), he earned a second master in ICT with a major in *e-Health* (Politecnico di Milano, 1996), and completed his PhD in Computer Science with a thesis in *intelligent networks* (University College London, 2001). He then progressed to a range of tenured academic roles at University of Surrey (*intelligent networks*, 2001-05) and Essex University (*intelligent systems*, 2005-2008). In the period between 2008 and 2020, he held full professorships at Eindhoven University of Technology (NL), University of Derby (UK), and Edinburgh Napier University (UK), in tandem with Visiting and Distinguished Professorships in China and Visiting Professorships in the UK, Australia and China. In 2017 he was the founding director of the Data Science Research Centre, which is now a prominent UK institution in data science and intelligent systems.

Research Activity: Antonio´s team is at the forefront of influential research in *data science* and *artificial intelligence*. He is renowned for his contributions to *micro-edge intelligence* and *miniaturized machine learning*, which have significant potential in harnessing *data-intensive systems*, specifically in the context of *smart cities*, *cyber-physical systems*, *Internet of Things*, *smart energy*, and *machine learning with humans in the loop*. Antonio has led the international team that has made a breakthrough in *artificial neural networks*, initiating a new research strand on *Sparse Neural Networks* (see Nature Communications paper, having 60k accesses and 448 citations). He is also well-known for demonstrating machine learning processes in tiny sensors, proving the benefits of concurrent sensing and learning.

Important scientific results (projects, papers, awards, etc.)

Research Projects: He has been involved in several research and development projects in the research/technical areas of data-intensive systems, intelligent IoT, smart sensing, mesh networking and computing, artificial neural networks miniaturization, intelligent networks, and urban informatics. In the last 26 years he has gained research grants totalling over €17m, including EU funding and national funding in the UK, the Netherlands, Italy, and China, in addition to contracts and sponsorships from Industry. His most recent National research projects, as principal investigator, are:

- PRIN project "Community-Oriented Wearable Computing Systems" (2022-2025, grant CUP I53C21000210001, total budget: EUR 176k);
- PRIN project "Self-optimizing Networked Edge Control for Cooperative Vehicle Autonomy" (2023-2025, grant CUP E53D23000920001, (EUR 60k);
- UniBZ Startup project "Sparse Artificial Neural Networks for Embedded Machine Learning" (2021-2024, grant CUP I55F21001900005, (EUR 70k);
- Pfizer project "Analysis for Speech Recognition using Artificial Intelligence methods" (2023-202), grant EG2202, (EUR 43,650).

A selection of past International projects, in which he was PI, are:

- H2020 project INTER-IoT https://inter-iot.eu/ (€ 350k)
- EU ARTEMIS ACCUS https://cordis.europa.eu/project/id/333020 (€ 138k)
- ARTEMIS DEMANES https://artemis-ia.eu/project/37-demanes.html € 461k)
- EIT ICT RICH, Reliable IP for time synchronized Channel Hopping networks (€ 244k)
- COST Action IC1105 – 3D-ConTourNet: 3D Content Creation, Coding and Transmission over Future Media Networks (€ 30k)
- Shanghai Thousand Talents, Shanghai Science and Technology Commission, China. CN¥ 2m (€ 270k)
- EIT ICT SNE, Smart Networks at the Edge (€ 43k)
- KTP project with RDS Global on IoT black-box in automotive (€ 588k)
- KTP project with Jena on Smart Pallets (€ 490k)
- UoD investment fund to create Data Science Centre (€ 2m)
- EPSRC GR/S09371 POLYMICS: Policy-based Middleware for Context-aware Services (€ 189k)

Publications and Awards: He has been credited with over 450 peer-reviewed publications involving, overall, more than 150 co-authors, securing 11 conference best-paper awards, and 2 journal best paper award. He has authored 6 book monographs, including a major 900-page handbook on peer-to-peer computing. He has 6 patents. He has received the University of Surrey best student feedback teaching award (2002); the Eindhoven University valorisation award (2015); the University of Bolzano teacher of the year award (2022); and the University of Bolzano Performance Bonus (years 2021-23). He IEEE Senior Member (since 2015), and Fellow of the UK Higher Education Academy, UK (since 2003).

Bibliometrics (Feb´26): According to SCOPUS he has: h-index=39; citations=6,709. According to Google Scholar he has: h-index=49; citations= 12,112; i10-index=175.

Professional Research Services:

- Co-founding editor in chief of the Springer Book Series on Internet of Things: Technology, Communications and Computing. He is currently associate editor of the

following journals: Journal of Network and System Management; International Journal of Network Management.

- Guest-edited several journal special issues in his area of expertise
- Delivered dozens of keynotes at international conferences
- Co-chaired over 50 international conferences and workshops
- Member of the technical program committee in over 200 conferences.

International Activity:
- Has held several academic roles abroad between 1996 and 2020 (see above);
- Was the founding director of the Data Science Research Centre, University of Derby;
- Has held numerous visiting professorships, including University of Derby (UK), Shanghai Ocean University, Griffith University, Brisbane.
- Distinguished Professor of Artificial Intelligence, Shanghai Ocean University

Technology Transfer: He has carried out several projects with industry, which has led to significant technology transfer, including 6 patents, and a vast number of publications involving industry co-authors. He has been in the scientific advisor of two start-up companies, Fractal Networx (Cyprus) and SmartDutch (The Netherlands). He was also the executive board member of three Dutch institutes: the Data Science Centre; the Centre of Wireless Technology; and the Eindhoven Institute for Research in ICT.

Professional Activity: He is IEEE Senior Member (since 2015), Fellow of the UK Higher Education Academy (since 2003) and member of the following IEEE Technical Committees: Interactive and Wearable Computing and Devices; Environmental Informatics and Sensor Networks; Big Data; Internet of Things; Smart Cities; Smart Grid; Green ICT; Software Defined Networks; QoE for Multimedia Communications; Rebooting Computing; Computer Supported Cooperative Work in Design.