Dr. Mingming Liu

Assistant Professor in Electronic Engineering

Room 346, Stokes Building
Dublin City University
Dublin 9, Ireland
+353-871325129
mingming.liu@dcu.ie

Summary

I am currently working as an Assistant Professor in the School of Electronic Engineering, Dublin City University (DCU). I have several years of experience in machine learning, control and optimisation theories with applications in 5G & IoT, smart grid, intelligent transportation and smart cities. Prior to DCU, I was employed at IBM Ireland Lab as a data scientist and applied researcher, where I was involved in four EU H2020 projects acting as work package leads and task leads for different projects. The main focus of my work was to leverage the state-of-the-art machine learning algorithms and optimisation techniques for solving various research challenges arising in industry. I am an IEEE member and have published several top-tier journals in my research fields, the average impact factor of my published journal papers has been over 5.5. I have also actively involved in many academic activities, including technical committees, organisation and management committees for both national and international events in my research areas.

Education

9/2011–9/2015 **Ph.D. in Distributed Control and Optimisation**, *Hamilton Institute*, National University of Ireland Maynooth, Ireland.

Supervisors:
- Prof. Robert Shorten (Imperial College London at present) and Prof. Seán McLoone (Queen's University Belfast at present).

9/2007–6/2011 **B.Eng. (1st Hons) in Electronic Engineering**, *School of Electronic Engineering*, National University of Ireland Maynooth, Ireland.

Work Experience

09/2019–Present **Assistant Professor in Electronic Engineering**, *Dublin City University*.

6/2018–9/2019 **Data Scientist, Applied Researcher, H2020 Project Lead**, *IBM Ireland Lab*.

11/2017–6/2018 **Senior Postdoctoral Research Fellow**, *University College Dublin*.

9/2015–11/2017 **Postdoctoral Research Fellow**, *University College Dublin*.

H2020 Project Experience

2019 **5G-Solutions for European Citizens (5G-Solutions)**, IBM.

2019 **Vision Inspired Driver Assistance Systems (VI-DAS)**, IBM.

2019 **New ICT Infrastructure and Reference Architecture to Support Operations in Future PI Logistics NETworks (ICONET)**, IBM.

2018 **Cognitive Heterogeneous Architecture for Industrial IoT (Chariot)**, IBM.

2017 **European Initiative to Enable Validation for Highly Automated Safe and Secure Systems (Enable-S3)**, University College Dublin.

Awards

2012 **Ph.D. scholarship (3 years fully funded)**, *Science Foundation Ireland*, Ireland.

2011 **Doctoral teaching scholarship (4 years fully funded)**, *Maynooth University*, Ireland.

2011 **Agilent technologies award (for best final year project)**, *Maynooth University*, Ireland.

Supervision

2019 **Principle supervisor of 1 PhD student and 5 M.Sc students**, *Dublin City University*.

2018 **Co-supervisor of 1 PhD student and 1 M.Sc student**, *University College Dublin*.

Certificates

2019 **Cognitive Practitioner**, IBM.

2018 **Deep Learning**, IBM.

2015 **Professional Certificate in Teaching and Learning**, NUI Maynooth.

Scientific Activities

Reviewer: IEEE Transactions on Smart Grids
IEEE Transactions on Intelligent Transportation Systems
IEEE Transactions on Systems, Man, and Cybernetics: Systems
International Journal of Electrical Power and Energy System

Organisations: IEEE Member
IEEE 5th World Forum on Internet of Things (organising committee & track co-chair)
IEEE 6th World Forum on Internet of Things (AI & ML track co-chair)
EU COST Action CA19126 (management committee member)

Key Achievements (Research and Impact)

1. **Pedestrian-Aware Engine Management Strategies for Plug-in Hybrid Electric Vehicles**, *This paper was nominated as the best paper by reviewers in IEEE Transaction on Intelligent Transportation Systems. The work itself has been received wide attentions by automotive industry in Ireland such as Nissan, Toyota and Renault*.
2. **A New Take on Protecting Cyclists in Smart Cities**, *Results are published in top transaction of intelligent transportation system research - IEEE Transactions on Intelligent Transportation Systems. The idea of this work has attracted attention by Dublin city council for improvement of next generation transportation system for cyclists in Dublin city*.
3. **On the Stability and Convergence of a Class of Consensus Systems with a Nonlinear Input**, *Results are published in top journal of system and control theory research Automatica*.
4. **A Distributed and Privacy-Aware Speed Advisory System for Optimising Conventional and Electric Vehicle Networks**, *Results are published in IEEE Transactions on Intelligent Transportation Systems*.
5. **Smart Procurement of Naturally Generated Energy (SPONGE) for Plug-in Hybrid Electric Buses**, *Results are published in leading journal of automation engineering - IEEE Transactions on Automation Science and Engineering. Results presented in this paper have also been included in a recent published book entitled "Electric and Plug-in Hybrid Vehicle Networks: Optimization and Control" by CRC press*.
6. **A Privacy-Aware Transmission Frequency Management System for Optimizing IoT Edge Devices**, *Results have been indexed as "Search 1 (highest rank)" in IBM Ireland patent board*.