Dr. Mingming Liu

Assistant Professor in Electronic Engineering

Room 346, Stokes Building
Dublin City University
Dublin 9, Ireland
+353-17008492
mingming.liu@dcu.ie

Summary

I am currently working as an Assistant Professor in the School of Electronic Engineering at Dublin City University (DCU). I received a B. Eng (1st Hons, ranked 1st) in Electronic Engineering from National University of Ireland Maynooth in 2011 and a PhD from the Hamilton Institute at the same university in 2015 when I was 26 years old. I have several years of experience in machine learning, control and optimisation theories with strong links to electric, hybrid vehicles and IoT especially in the context of smart grid, intelligent transportation and smart cities. Prior to DCU, I was employed at IBM Ireland Lab working as a data scientist, applied researcher and project lead, where I had been involved in several EU H2020 projects, including Chariot, VI-DAS, ICONET, COPKIT and 5G-Solutions. I was the work package lead for VI-DAS and 5G-Solutions at IBM. Before IBM, I worked at University College Dublin as a (senior) postdoctoral researcher with a focus on both EU and Science Foundation Ireland (SFI) funded projects, including Green Transportation and Networks (SFI) and Enable-S3 (H2020). I am an IEEE member and have published several top-tier journals in my research fields, including "IEEE Transactions on Smart Grids", "IEEE Transactions on Intelligent Transportation Systems", "IEEE Transactions on Automation Science and Engineering" and "Automatica". The overall impact factor of my published journal papers has been greater than 60. Since 2018, I have secured more than €900k funding support from various sources for research. In addition, 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. I was a committee member & the automotive and transportation track co-chair for the 5th IEEE World Forum on Internet of Things. I am currently the management committee member for the EU COST Action CA19126 - Positive Energy Districts European Network.

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.

Supervision

2021 **Two of my FYP students won the scholarship for the Ide3a programmes**, *DCU*.

2020 **One of my FYP students won the IBM Opensource Prizes in Faculty of Engineering and Computing's 2020 Expo**, *DCU*.

2019 **Principle supervisor of 1 PhD student and 1 research master student**, *DCU*.

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

Funding and Awards

2021 **PI: Huawei-Insight Collaboration Project**, DCU.

2018 **PI: EU H2020 5G-Solutions**, IBM.

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

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

Key Achievements (Research and Impact)

1. **Usage-based Summaries of Learning Videos**, *Results are presented at the EC-TEL 2021 conference. The developed usage-based HMW system has been currently deployed in our university to help enhance students' quality of revision for asynchronized video materials in a remote learning environment*.
2. **Attention Based Video Summaries of Live Online Zoom Classes**, *Results are presented at the 35th AAAI Conference on Artificial Intelligence, Workshop on Imagining Post-COVID Education with Artificial Intelligence. The developed HMW system has been currently deployed in our university to help enhance students' attention in a remote online learning environment*.
3. **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*.
4. **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*.
5. **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*.
6. **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*.