

# Dr Ioannis MAVROMATIS

Senior Research Engineer

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## Core Skills

- › Real-world testbeds: Design & deployment
- › Cloud-Native: Architectures, tools & application design
- › Large-scale trials: Prototyping, deployment & evaluation
- › Networking: OSI Layers 2-7 & wireless standards
- › Infrastructure: Automation, provisioning, management
- › Software: Life-cycle, engineering & development
- › Simulators: Link/system-level & build/test use-cases
- › 5G Systems, V2X Communications & IoT systems
- › R&D: Experience on both research & development
- › Bid Writing

## Professional Experience

### Research & Industrial Positions

- 10/2020 - **Senior Research Engineer**, *Bristol Research & Innovation Laboratory, Toshiba Europe Ltd.*, Bristol, UK.
  - › **UMBRELLA** - Development and deployment of a highly-available Cloud-Native Backend IoT platform.
    - Design and deployment of a large-scale wireless IoT testbed.
    - Involvement in various use-cases (street light monitoring, air quality sensing, cybersecurity).
  - › **SYNERGIA** - Design of secure Cloud-native platforms for enhanced Cybersecurity.
- 08/2019 - **Honorary Research Associate**, *University of Bristol*, Bristol, UK.
  - › Migration of AI-assisted Intelligent Transportation Solutions with Cloud-native and Mobile Edge Infrastructures.
- 08/2019 - **Research Engineer**, *Bristol Research & Innovation Laboratory, Toshiba Europe Ltd.*, Bristol, UK.
- 09/2020
  - › **UMBRELLA** - Development and deployment of a highly-available Cloud-Native Backend IoT platform.
  - › **CAVShield** - Leader/contributor of WP2: Cybersecurity on Cooperative Intelligent Transportation Systems.
  - › **CYTHEMIS** - Improvement/demonstration of an end-to-end Intrusion Prevention System.
- 10/2018 - **Research Associate**, *University of Bristol*, Bristol, UK.
- 08/2019
  - › **NG-CDI** - Development of an open-source AI-assisted 5G simulator for C-ITSs (DRIVE framework).
  - › **FLOURISH** - Development of a Fog Computing platform for large-scale connected vehicles experimentation.
- 02/2016 - **Research Assistant**, *University of Bristol*, Bristol, UK.
- 09/2018
  - › **FLOURISH** - Deployment of a large-scale ITS-G5 vehicular communications platform.
    - Demonstration of city-wide connected vehicle trials and data analysis.
    - Development of a parallelised version of the OMNeT++ INET framework.
  - › **VENTURER** - "Virtual Driving Testbed" Development - in-lab experimentation on vehicular communications.
- 04-09/2012 **Network Research Assistant (intern)**, *University Carlos III of Madrid (UC3M)*, Madrid, Spain.
  - › **FLAVIA** - Improvements on Energy Efficiency for WLAN networks, focusing on the IEEE 802.11b/g/n/u.

### Networking and IT Positions

- 05-08/2013 **IT and Network Support and Consultant**, *"Unifast" Kiriakoulis Georgios*, Thessaloniki, Greece.
- 07-10/2008
  - › Planning and deploying IT and networking (wired/wireless) solutions for local businesses.
  - › Consulting on Enterprise Resource Planning (ERP) systems.
- 07-08/2007 **IT and Network Support and Consultant**, *TITAN Cement*, Thessaloniki, Greece.
  - › Planning and deploying IT and industrial wired networking solutions.
  - › Programming/Testing PLC and SCADA automation systems.

### Teaching Assistant / Lab Demonstrator

- 2014 - 2018 **Teaching Support Assistance**, *University of Bristol*, Bristol, UK.
  - › ~360 h of teaching in Programming- and Networking-related topics.

## Education

- 10/2014 - **PhD in Communications**, *Dept. of Electr. & Electron. Engineering, University of Bristol*, Bristol, UK.
- 10/2018
  - › **1st Year's Research Group Project**: "Localisation Of Strayed Targets (LOST)" (taught phase).
  - › **PhD Title**: "5G Communication Framework for Smarter Autonomous Vehicles" (research phase).
- 09/2013 - **MSc in "Wireless Communications and Signal Processing"**, *Dept. of Electr. & Electron. Engineering, University of Bristol*, Bristol, UK, *Grade: 68% - Pass with Merit*.
- 09/2014
  - › **MSc Thesis**: "Propagation Modelling using Iterative Physical Optics".

05/2007 - **BSc in “Information Technology Engineering”**, *Dept. of Information Technology, ATEI of Thessaloniki*, Thessaloniki, Greece, *Grade: 7.22/10*.

➤ **BSc Thesis:** “Studying Quality of Experience (QoE) over Wireless Networks”.

## Awards, Patents, Grants & Scholarships

07/2020 **Innovate UK Grant no. 53707**, £2,177,375, SYNERGIA Project, Bid Writer.

03/2020 **U.S. Patent**, *US449398*, System and Method for Detecting and Rectifying Concept Drift in Federated Learning (*filed*).

01-03/2020 **Innovate UK Grant no. 133989**, £427,480, CAVShield Project, Work Package Leader, Bid Writer.

05/2019 **IEEE Best Paper Award**, *IEEE Vehicular Technology Conference (IEEE VTC-Spring)*, 2019.

12/2018 **IEEE Popularity Award**, *IEEE Vehicular Networking Conference (IEEE VNC)*, 2018.

09/2014 **Full EPSRC Studentship Funding**, *University of Bristol, UK*.

## Personal Development

### Training and Certifications

08/2020 **“Kubernetes MasterClass : Kubernetes & Docker Swarm for DevOps”**, Udemy, (Expected).

08/2020 **“Machine Learning”**, Coursera, organised by Stanford University, (Expected).

02/2011 **Cisco Certified Network Association (CCNA)**, *Dept. of Information Technology, ATEI OF THESSALONIKI*, Thessaloniki, Greece.

08/2008 **Network Administration Professional Certificate**, *Vellum Global Educational Services, UNIVERSITY OF CAMBRIDGE*, Thessaloniki, Greece.

### Summer Schools

06/2018 **“5G V2X Communications Summer School”**, Organised by: King’s College London, London, UK..

07/2016 **“Car as a Service - creating tomorrow’s smart mobility service platform”**, Organised by: BMW, EURECOM, and Technische Universität München, Tegernsee, Germany..

## Technical Skills

**Virtualisation:** Docker, Proxmox, Google Cloud Platform.

**Automation:** Kubernetes (K8s, K3s, MicroK8s), Docker Compose, Serverless (OpenFaas), Vagrant, Ansible.

**Programming:** C, C++, MATLAB, Bash, GoLang, Python, HTML, CSS, Javascript, PHP, Java.

**Databases:** MySQL, PostgreSQL, InfluxDB, IBM DB2.

**Networking:** HAProxy, Nginx, Wireshark/Tcpdump, Iperf3, OpenVPN, DHCP, DNS, FTP, LDAP, Nmap.

**Monitoring:** Grafana, Prometheus, Elastic, Kibana, Fluentd/FluentBit.

**Productivity:** Git, Jira (Scrum, Kanban), Trello, LaTeX, MS Office, CI/CD pipelines (TravisCI, Jenkins).

**SDRs:** National Instrument’s LabVIEW, GNU Radio.

**Simulators:** OMNeT++ (including Veins), SUMO, NS-2, NS-3, OPNET.

**OSs:** Linux-based Distributions (including kernel and driver programming), OS X, MS Windows.

**Video/Image:** Adobe software suite (After Effects, Photoshop and Premiere), GIMP, OmniGraffle.

## Volunteering

➤ Industrial Mentoring Scheme, Faculty of Engineering, University of Bristol.

➤ Technical Program Committee member and reviewer - several conferences and journals.

➤ Organisation of the annual “CDT in Communications” conferences.

➤ Organisation of outreach activities of the University of Bristol for post-16 year old pupils.

➤ Organisation of Media Days and Public Events for FLOURISH and VENTURER projects.

➤ SYMBIOSIS - Journalist and event organiser: Anti-racism, multi-cultural environments for the diversity of humans.

## Interests & Hobbies

Basketball, Cycling, Video and Photo Editing, Travelling, Sketching, Chess.