Post-doc position on 5G V2X for Connected and Automated Driving

Job description

The UWICORE laboratory at the Universidad Miguel Hernández de Elche (Spain) offers 1 post-doc position to study 5G V2X (Vehicle to Everything) communications for connected and automated vehicles (CAVs). V2X communications will help CAVs exchange information about their driving intentions or surrounding perception. Using this information, vehicles can detect traffic risks in advance and can more easily coordinate their maneuvers. Critical V2X services have been traditionally envisioned over direct or sidelink V2V (Vehicle to Vehicle Communications) communications for reduced latency. However, the flexibility and features introduced with 5G, and the introduction of Mobile Edge Computing (MEC) technologies, can reduce the end-to-end (E2E) latency and open the possibility to support critical V2X services with network-based communications. The objective of this position is to study the possibility to support critical V2X services using 5G network-based communications (i.e. Vehicle to Network to Vehicle Communications) instead (or as a complement) of direct V2V communications. To this aim, the project will study E2E performance limits of 5G under different deployments as well as scalability of the network as more V2X services and CAVs get deployed. This includes realistic deployments also where vehicles are supported by different network operators and where data needs to be exchanged between V2X service-instances hosted on different OEM clouds (can be centralized or deployed in MECs). The research will be conducted for (and together) a research USA-based lab of an international car manufacturer (OEM). The researcher will utilize (and extend) for its research existing models and simulators implemented at the UWICORE laboratory. More information can be found at the following publications accepted at the IEEE Transactions on Vehicular Technologies (TVT): https://arxiv.org/abs/2201.06082 and https://arxiv.org/abs/2201.06083

Candidates profile

The post-doc candidate should have a PhD in Telecommunications, Electrical, or Computer Engineering (or closely related disciplines). Postdoc candidates should have a proven track record of publications in relevant journals and conferences, and the candidate should have done the PhD or have experience on V2X networks and/or 5G (and beyond) networks. Simulation experience will be positively considered as well as strong theoretical foundations, analytical capabilities and critical thinking. Good written and spoken communication skills in English are required, as well as team working skills, self-motivation and a strong desire to utilize technology for improving society.

Conditions

- Competitive annual salary based on knowledge, qualifications and/or years of work experience of the candidate.
- Full time dedication with flexible working conditions.
- Application deadline: continuous evaluation until the position is filled.
- Starting date: ASAP from March/April 2023.
- Non EU-candidates should have preferably an EU working permit.

Location/Who we are/About the Uwicore lab

The UWICORE (Ubiquitous Wireless Communications Research) laboratory is part of the Communications Engineering Department of the Universidad Miguel Hernández de Elche (Spain). The laboratory has strong expertise and research record on the design of wireless technologies to verticals, in particular in the areas of connected and automated vehicles as well as Industry 4.0. The lab actively participates in European research programs and closely works with national and international companies and research institutions. The laboratory also actively participates in standardization groups (e.g., ETSI) to transfer its research output. The candidates will join a very dynamic research lab with international collaborations and possibilities to develop their research profile and promote their career.

Application

Interested candidates should send their application by email. Candidates should send their Curriculum Vitae and their Academic Certificate and transcript of records to Prof. Javier Gozalvez (j.gozalvez@umh.es), Dr. Miguel Sepulcre (msepulcre@umh.es) and Dr. Baldomero Coll (bcoll@umh.es). The subject of the email should be "5G V2X Position - Candidate name". Applications will be continuously evaluated upon reception, and online interviews will be organized with the selected candidates until the positions are filled.