

Description of Funded Research Projects

1<sup>st</sup> Call for H.F.R.I. Research Projects  
to support Post-Doctoral Researchers



**H.F.R.I.**  
Hellenic Foundation for  
Research & Innovation

Research Project Title:

**Crowdsourced networks,  
services, transport: analytical  
foundations of sustainable  
sharing**

**Principal Investigator:**  
**Merkouris Karaliopoulos**

**Popular Title:**

**Crowdsourced networks, services,  
transport: analytical foundations of  
sustainable sharing**

**Scientific Field:**

**Mathematics and Communication Sciences  
Computer Sciences and Informatics**

**Host Institution:**

**Athens University of Economics and Business  
(AUEB)**



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The project focuses on applications and services that lie in the broader area of sharing economy. The future of sharing economy and its ultimate role in the world economic activities will depend on many factors, including the legal and regulation policies applied to them. In any case, however, the related service platforms need to cope with fundamental issues regarding the allocation and sharing of common resources, the provision of incentives, and their business models. CRESCENDO responds to this need by drawing analysis tools from the areas of network economics, queuing theory and (stochastic) optimization, but also from machine learning and numerical analysis. It is structured along three discrete thematic areas: shared network connectivity, participatory sensing, and crowdsourced transport. Common to all three thematic areas is the dimension of crowdsourcing and resource sharing, as well as the sustainability challenges that relate to them.

From a scientific point of view, project contributions are expected in the areas of optimization (formulation of novel optimization problems under radically different assumptions about the decision-making process of human users), algorithms (design/analysis of algorithms for original theoretic problem instances), network economics and game theory. At socioeconomic level, the project research aims at better understanding, supporting, and enhancing activities that (a) have generated reasonable expectations for economic development and new jobs; and (b) are approached as the means towards higher market pluralism (market democratization), offering alternative solutions in otherwise mono/oligopolistic markets and reducing transaction costs that inflate, often disproportionately, the overall cost of producing and distributing goods.

The project is hosted at the Department of Informatics of the Athens University of Economics and Business (AUEB). It involves synergies with research groups in the Singapore University of Technology and Design (SUTD) and NEC Labs Europe and will engage two PhD candidates in its activities. Its duration is 36 months.

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Freedom to determine my own research agenda for the next three years, relaxing the pressure for finding research funding in the frame of a cooperative EU research project, which is more demanding in terms of administrative work at the preparation phase. Responsibility, with respect to the selection and co-supervision of PhD students with the official status of PI and having an impact that is up to the standards of an excellence research project.

Reward for a year-long effort. Opportunity for a direct acquaintance with (and training on) the bureaucratic processes of research project management in Greece.

*The Principal Investigator,  
Merkouris Karaliopoulos*

## Funding

Amount: **172,000 €**

Duration: **36 months**

Foundation: **H.F.R.I.**





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