# Dávid Szabó

### **EIT Digital Budapest DTC**

**PhD topic:** Game theoretical analysis of the emergence of complex newtroks

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Industrial partner: Ericsson Hungary

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'At EIT Digital Doctoral School I learned a lot about how to analyse and evaluate an idea. I learned the most efficient ways of improving my approach in order to be able to turn my ideas into successful business.'



#### Achievements & further plans

Dávid is a doctoral candidate at the BME and he is expected to defend his PhD at the end of 2016. His PhD research is in the field of **complex networks and routing protocols**. His research objectives also include **network coding** and future Internet technologies. He spent his six-month mobility programme at the Technische Universität Dresden in Germany where he extended his knowledge of Software Defined Networking (SDN) and Network Coding. Currently, he is working on the development of a business model for an SDN based startup and he is considering funding a company with Péter Megyesi, who is also a student of the EIT Digital Budapest DTC.

The incremental improvement of current networks (that happened in the case of 2G, 3G, and 4G) won't be enough for 5G. Instead, we have to shift the existing telecommunication practice onto a completely new basis and introduce 'code centric' networks.

#### Educational status at Spring semester of 2016:

#### **Reserach topic**

5<sup>th</sup> generation mobile networks are expected to be commercialized by 2020. This new technology has to face challenges that are far beyond earlier generation requirements. Today there are roughly 7 billion devices (PCs, cellular phones, tablets, intelligent sensors, etc.) that connect to the Internet for longer or shorter periods of time; and experts predict a rise to an almost unbelievable number, 500 billion by 2022.



The incremental improvement of current networks (as it happened in the case of 2G, 3G, and 4G) will not be enough. Instead, we have to shift the existing telecommunication practice onto a completely new basis. The aim of the research is to examine the integration possibilities of promising technologies that help us convert the traditional packet switched networks into 'code centric' networks. Software Defined Networking and Network Coding seem to have a determining



role in this paradigm shift. SDN completely changes the way we understand network management, it creates abstractions that make the network programmable in a clear and organized way. Network Coding at the same time makes the communication much more resilient and efficient throughout the network in many communication scenarios. Investigating how these technologies can be integrated into the current telecommunication architecture holds great future potential.



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