



Name: Róbert Trényi

Location: University of Vigo, Spain

Project: Quantum communication protocols in optical networks

Nationality: Hungarian

Supervisor: Prof. Marcos Curty

### Short biography

I received my Bachelor's degree in Physics from the University of Szeged, Hungary. I continued my studies there and obtained my Master's degree in Physics with distinction in 2016. My Master's thesis was about the orbital angular momentum carried by optical beams. I am currently a PhD student at the Department of Signal Theory and Communications at University of Vigo, working on the project "Quantum communication protocols in optical networks" in the framework of "Quantum Communication for All" network.

### Research interest

My current research interest lies in the field of Quantum Cryptography and Quantum Optics.

### Current project

My project is to explore novel potential applications of quantum cryptography that can go beyond the application of quantum key distribution and that can outperform current classical solutions. The idea is to investigate some relevant examples of such protocols in order to evaluate their feasibility, security and performance with current (or foreseen) technology. For instance, quantum digital signature schemes, secure identification schemes. I expect to be

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able to identify practical scenarios where such schemes can outperform classical cryptographic solutions, find suitable implementable designs for them, and quantify their security.