PHD POSITION IN INFORMATION THEORY AND QUANTUM COMMUNICATIONS

Bizkaia talent

Company Description

The Tecnun School of Engineering and the University of Navarre (the campus) is located in the beautiful coastal city of San Sebastian. Throughout the year, we organize team-building events, networking activities and students can take advantage of several opportunities for growth and career development, from free language classes to career resources and extracurricular activities. The Tecnun School of Engineering and the University of Navarre embrace inclusion and diversity as key values. We are fully committed to removing any discriminatory barrier related to gender, and not only, in recruitment and career progression of our staff.

Information

📅 Deadline: 2021-07-01
🗂 Category: Academia
🚩 Province: Gipuzkoa

💲 Country: Spain
🏛 City: San Sebastián

Company

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MEMBER OF
BASQUE RESEARCH
& TECHNOLOGY ALLIANCE

Main functions, requisites & benefits

Main functions

The Mathematical Principles of Information and Communication Group at the Tecnun-School of Engineering (University of Navarra, Donostia/San Sebastian, Spain) has a PhD position available within the fields of Classical Information Theory, Quantum Information Theory, Quantum Communications and Quantum Computing. The PhD position is located at the Ibaeta Campus, affiliated to the Department of Bioengineering and Basic Sciences, for a period of 3 years with the possibility of extensions based on specific circumstances. The position is scheduled to start in June 2021 and will be conducted under the supervision of Prof. Pedro M. Crespo The PhD position will cover theoretical advancements, algorithm design, as well as simulation and experimental evaluation, on the following research topics: Quantum Error Correction for the implementation of fault-tolerant Quantum Computing. Research in this area will focus on error correcting codes such as Quantum Low Density Parity Check codes (QLDPC) and Quantum Turbo codes (QTC). Classical and Quantum Information Theory (study of the theoretical limits of quantum channels and communication devices). Channel, Noise, and Decoherence Modelling.

Requisites

Qualifications: The candidate should possess an MSc degree or equivalent in Electronic Engineering, Telecommunications Engineering, Computer Science, Applied Mathematics or Applied Physics. Experience: The ideal candidate should have some knowledge and experience in a number of the following topics: Classical or Quantum Information Theory. Classical or Quantum Error correction. Channel/Source Coding. Communication systems. Quantum Physics. Skills: Programming expertise is required, especially in languages such as Matlab, Python or with C/C++. Language Skills: Fluent written and verbal communication skills in English are required. Communication skills in Spanish are not necessary although they may be helpful.

Benefits

Contract Type: Fixed Term 36 Month contract - extendable up to 48 months if required. Work Hours: Full Time 37,5 Hours per Week Internal Title: Doctoral Researcher. Employee and student status. The Ph.D. student will benefit intellectually from the interaction with internationally recognized researchers, well-equipped environments and the diverse community of the University. The position also allows the possibility to pay extended visits to universities in North America and Europe. Joining the Mathematical Principles of Information and Communication Group to conduct research on topics related to Quantum Computation represents a unique opportunity to become trained in otherwise hard to learn about scientific areas. Within this stimulating learning environment, the Ph.D. student will work alongside other students, post-docs and professors in order to further our current understanding of specific areas of Information Theory and Quantum Information with the goal of disseminating results through scientific publications. The position comes with a competitive salary package. The University offers a 12 month-salary package, over six weeks of paid time off and has the right to receive public healthcare. As a doctoral student, tuition exemption. The Ph.D. student will become part of a diverse and