Paderborn University is a high-performance and internationally oriented university with approximately 20,000 students. Within interdisciplinary teams, we undertake forward-looking research, design innovative teaching concepts and actively transfer knowledge into society. As an important research and cooperation partner, the university also shapes regional development strategies. We offer our more than 2,600 employees in research, teaching, technology and administration a lively, family-friendly, equal opportunity environment, a lean management structure and diverse opportunities.

Join us to invent the future!

With the **Institute for Photonic Quantum Systems (PhoQS)**, the Paderborn University aims to establish an international research center in the field of photonic quantum technologies. The goal is to develop new technologies for photon-based quantum applications as well as new theoretical and experimental concepts and research approaches. The ultimate focus is on the understanding and control of photonic quantum simulators and quantum computers.

Within this scope, the Department of Computer Science in the Faculty of Computer Science, Electrical Engineering and Mathematics invites applications for the following position:

PhD Student (f/m/d)
(salary is according to E 13 TV-L)

The full-time position is embedded in the project "Photonic Quantum Computer (PhoQuant)" of the Bundesministerium für Bildung und Forschung (BMBF), and is split between the research groups of Prof. Johannes Blömer and Prof. Sevag Gharibian. The fixed-term corresponds to the approved project period.

The duration of employment is governed by the Wissenschaftszeitvertragsgesetz (WissZeitVG), which serves to promote a doctoral procedure in the field of quantum information technology. An extension to finish the PhD is possible in accordance with the rules of the WissZeitVG.

Responsibilities:
- Conduct research in quantum algorithms and complexity theory, including (but not restricted to):
    - Classical simulation algorithms for near-term photonic quantum computing devices
    - Classical simulation algorithms for Gaussian Boson Sampling experiments
    - Algorithmic applications of (Gaussian) Boson Sampling frameworks

Qualifications:
- Completed scientific studies (master's degree, diploma or similar) and Master's thesis in computer science, mathematics or physics
- Background in at least one of: Quantum computation, quantum algorithms, quantum complexity theory, quantum photonics

Since Paderborn University seeks to increase the number of female scientists, applications of women are especially welcome. In case of equal qualification and scientific achievements, they will receive preferential treatment according to the North Rhine-Westphalian Equal Opportunities Policy (LGG), unless there are cogent reasons to give preference to another applicant. Likewise, applications of disabled people with appropriate qualification are explicitly requested. This also applies to people with equal status according to the German social law SGB IX.

Please send your application including a CV and list of publications using the **Ref. No. 5653** by **10th of January 2023** via email (preferably in a single pdf file) to sevag.gharibian@upb.de.

Information regarding the processing of your person data: https://www.uni-paderborn.de/zv/personaldatenschutz.

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