Chair of Theoretical Information Technology
Department of Electrical and Computer Engineering
Technical University of Munich

Munich, June 2025

Are you passionate about novel computing concepts and the future of wireless communication? Do you want to be part of a team that is researching and designing next-generation (6G) wireless communication systems? If so, we have an exciting opportunity for you!

The Chair of Theoretical Information Technology offers a position as

Research Associate (f/m/d)
Spiking Neural Networks for Communications and Signal Processing

Subject to personal qualification, employees are remunerated according to salary group E 13 TV-L. The position is initially funded until June 2027 with the possibility of an extension.

The novel computing approach of neuromorphic computing mimics the functioning of biological brains in hardware. Spiking neural networks (SNNs) encode information in the form of discrete impulses (spikes), similar to the action potentials in biological neurons. Key research questions are: How can we harness the power efficiency of spiking neural networks in applications? How does the performance of SNNs compare to classical neural networks? You will work with cutting-edge neuromorphic hardware (SpiNNaker2) and on applications related to wireless communications and signal processing. You will also write publications and present your research results at international conferences.

To be qualified for this position, you should have

- Excellent university degree in electrical engineering, computer science, communications engineering, mathematics, physics (or similar)
- Proficiency in Python and C/C++
- Prior knowledge of deep learning
- Goal-oriented, independent, and structured work style
- A strong interest and curiosity in novel computing concepts and wireless technology

The following points are considered a bonus

- Prior knowledge of signal processing
- Prior knowledge of wireless communication systems (MIMO-OFDM, LTE, 5G-NR)
- Experience with spiking neural networks
- Familiarity with sensor data processing
- Experience with software-defined radios

Our offer

- Research on current topics in an inspiring international working environment
- Full-time position (E13 TV-L) with the aim of obtaining a doctoral degree

How to apply

Please send us your application by e-mail (jobs.lti.cit@tum.de with "SNN" in the subject line), including the following documents:

- Curriculum vitae, copies of relevant certificates and diplomas (or transcript of records if not yet finished)
- Short description of your research interests and your motivation for the application
- Master thesis and (if available) up to 3 publications
- Contact information for two references

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General Information
The Technical University of Munich (TUM) is aiming to increase the number of women employees, and applications from women are expressly welcomed. Applicants with disabilities, with essentially the same suitability and qualification, will be preferred. As you apply for a position at TUM, you will provide personal data; please note our data protection information according to Art. 13 Data Protection Basic Regulation (DSGVO) on the collection and processing of personal data in connection with your application, http://go.tum.de/554159. By submitting your application, you confirm that you have taken note of the data protection information of the TUM.

Contact
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