

Project Assistant (Prae-Doc, all genders)

30 hours/week, for 36 months with the possibility of extension up to 4 years

TU Wien is Austria's largest institution of research and higher education in the fields of technology and natural sciences. With over 26,000 students and more than 4000 scientists, research, teaching and learning have been conducted here for more than 200 years, guided by the motto "Technology for People". As a driver of innovation, TU Wien fosters close collaboration with business and industry and contributes to the prosperity of society.

At TU Wien, the Research Unit **Wireless Communication** of the **Institute of Telecommunications** is offering a 30-hours/week position as a Project Assistant (prae-doc) in the EU-funded research project **IoT-ZERO**. The position is initially limited to 36 months, with the possibility of extension up to a total of 4 years, and is intended to lead to a doctoral degree. Expected start: January 2027.

Project's vision:

Billions of small connected devices already track goods, monitor machines and sense our cities, and their number keeps growing. Today, most of them run on batteries that must be replaced or thrown away, which is costly, hard to scale and produces large amounts of electronic waste. IoT-ZERO, a European project coordinated by TU Wien, develops the technologies that allow Internet of Things (IoT) devices to run on (close to) zero energy. Devices that harvest energy from their environment, act only when something happens, and stay connected via both terrestrial and satellite networks. The advertised position is part of Work Package 1, which builds the energy-aware foundation of the project. Here, energy is treated as a first-class resource, just like bandwidth or time: it is modelled, predicted, observed and budgeted across the entire system, from the device to the network.

Your tasks:

- Conduct research on predictive lifecycle energy models that jointly capture energy harvesting, storage, computation and communication in IoT devices and networks.
- Use tools like stochastic modelling, machine learning and numerical optimization to forecast device lifetime and energy shortages, and embed these forecasts into a digital twin for "what-if" analyses.
- Contribute to the design of network-side energy observability and energy budgeting mechanisms that reduce signalling overhead and allow devices to sleep longer.
- Simulate communication systems using programming tools such as Python or Matlab and validate your models with measurement traces and proof-of-concept demonstrators.
- Collaborate with academic and industrial partners from across Europe, including research visits and joint project meetings.
- Publish and present your research findings in renowned international venues using English language, and write your doctoral dissertation.
- Contribution to teaching and supervision of master and bachelor students.
- Participation in national and international scientific events.
- Assistance with organizational and administrative tasks.

Your profile:

- You hold a Master of Science (M.Sc.) or diploma degree in Electrical Engineering, Information Technology or related fields like Computer Science, Mathematics or Physics.
- You have knowledge in one or more of the following areas: communication networks, IoT, stochastic modelling, numerical optimization, or machine learning.

- Experience with energy-harvesting systems, cellular IoT or digital twins is a plus.
- You have a strong interest in academic research and teaching.
- You have problem-solving skills and scientific curiosity.
- You are used to an independent working style.
- You enjoy programming.
- You are comfortable working in a team and in an international environment.
- You have very good communication skills in English.

We offer:

- The opportunity to pursue a PhD within a European project together with leading universities, research institutes and companies.
- A range of attractive social benefits (see [Fringe-Benefit Catalogue](#)).
- Internal and external training opportunities and various career options.
- Flexible working hours.
- Outstanding research environment in one of the most liveable cities in the world.
- Travel funding for conferences and research collaborations.
- Central workplace location in the heart of Vienna as well as good accessibility (U1/U2/U4 Karlsplatz)

We are committed to increase female employment in scientific positions. Female candidates are explicitly encouraged to apply. Preference will be given when equally qualified unless reasons specific to a male applicant tilt the balance in his favour. People with special needs are equally encouraged to apply.

Entry level salary is determined by the pay grade B1 of the Austrian collective agreement for university staff. This is a minimum of currently EUR 2,832.10/month gross, 14 times/year for 30 hours/week.

By submitting your application, you agree that your data may be stored and processed for the purpose of filling the vacancy. You can find TU Wien's privacy policy on TU Wien's webpage.

We look forward to receiving your application at E389.office@tuwien.ac.at until **07.12.2026**. Your application should be a single PDF file (max. 10MB) including your CV, motivation letter and academic certificates. Please use the format **LastName_FirstName_Application.pdf** to name your file. If you have any questions regarding the content, please contact Asst. Prof. Andrea Ortiz (andrea.ortiz@tuwien.ac.at).