IT:U – Kommunikations- und Informationsplattform
Verlautbarungsteil

Jahrgang 2026	**Ausgegeben am 05. März 2026**
Nr. 0020 Ausschreibung:	**Ausschreibung von PhD Doktoratsstudienplätzen**

Ausschreibung

der Interdisciplinary Transformation University Austria von Professuren

Die Interdisciplinary Transformation University Austria – IT:U schreibt die Besetzung von PhD Doktoratsstudienplätzen im Fach Computational X in den folgenden Forschungsgruppen aus:

- AI & Sustainability Policy Lab
- CubeSat Design & Sensing: "Embedded Sensors and CubeSat Architectures for Earth Observation Missions"
- Digital Molecular Medicine
- Neurosymbolic AI for Trustworthy Systems
- Quantum Information Theory & Experiment

Die Ausschreibungstexte sind im Sinn einer breit formulierten und missionsorientierten Ausschreibung zu verstehen und in der Beilage angefügt. Insgesamt sind bis zu elf PhD Doktoratsstudienplätzen mit Antrittsdatum 1. Oktober 2026 ausgeschrieben. Mit dem Studienplatz geht eine Inskription in das PhD Studium Computational X einher. Das Curriculum ist einsehbar unter: https://it-u.at/en/study-program/doctoral-school/phd-computational-x/

Entsprechend den im Bundesgesetz über das Institute of Digital Sciences Austria (Interdisciplinary Transformation University) festgelegten Grundsätzen betreibt die IT:U eine antidiskriminatorische Anstellungspolitik und legt Wert auf Chancengleichheit, Diversität, Inklusion, Gleichstellung der Geschlechter und Frauenförderung. Die IT:U strebt eine Erhöhung des Frauenanteils beim wissenschaftlichen Personal an und lädt daher qualifizierte Frauen ausdrücklich zur Bewerbung ein. Bei gleicher Qualifikation werden Frauen vorrangig aufgenommen.

Die Bewerbungsfrist endet am 30. April 2026.
Eine Bewerbung ist unter https://apply.it-u.at/ möglich

5 Beilagen

Die Gründungspräsidentin:
Stefanie Lindstaedt

Nicht rechtsverbindliche Übersetzung - Non legally binding translation:

IT:U – Communication and information platform
Promulgation Section

Volume 2026	**Issued on March 5, 2026**

Nr. 0020 Announcement: **Call for Applications: PhD Students Computational X**

Call for applications

PhD Students Computational X

The Interdisciplinary Transformation University Austria – IT:U announces the opening of calls for PhD students in the doctoral school Computational X in the following research groups fields, as outlined in the annex:

- AI & Sustainability Policy Lab
- CubeSat Design & Sensing: "Embedded Sensors and CubeSat Architectures for Earth Observation Missions"
- Digital Molecular Medicine
- Neurosymbolic AI for Trustworthy Systems
- Quantum Information Theory & Experiment

The job postings are intended to be understood as broadly formulated and mission-oriented and can be found attached. In total, the appointment of up to eleven PhD students is planned, with a start date of October 1, 2026. The Curricula of the doctoral school Computational X may be found on IT:U's webpage: https://it-u.at/en/study-program/doctoral-school/phd-computational-x/

In accordance with the principles established in the Federal Act on the Institute of Digital Sciences Austria (Interdisciplinary Transformation University), IT:U practices an anti-discriminatory hiring policy and places a strong emphasis on equal opportunities, diversity, inclusion, gender equality, and the promotion of women. IT:U aims to increase the proportion of women in its academic staff and therefore explicitly encourages qualified women to apply. In cases of equal qualifications, preference will be given to women.

The application deadline is April 30, 2026.
Interested students can apply at: https://apply.it-u.at/

5 Annex

The Founding President:
Stefanie Lindstaedt

#TRANSFORMINGTOMORROW: MAKE A DIFFERENCE WITH US.

IT:U is Austria's first public interdisciplinary university dedicated to digital transformation for the benefit of our society, economy, and environment.

1 PhD Position

CubeSat Design & Sensing: "Embedded Sensors and CubeSat Architectures for Earth Observation Missions"
IT:U Doctoral School - PhD-Program COMPUTATIONAL X

1 PhD position | 30h/week | Up to 4 years | On-site in Linz (AT) | Start Date: October 2026 | Principal Investigator: Fellow Professor Michele Magno

The **Smart Sensing and Systems Lab (S³ Lab)** is a research and teaching group at the **Interdisciplinary Transformation University Austria (IT:U)**. The group is looking for a talented and enthusiastic PhD researcher to strengthen our activities in **CubeSat design**, **embedded sensing**, **and system-level optimization for Earth observation**.

Field of Research & Scope

We are seeking a motivated PhD student to explore **innovative embedded architectures and sensor systems for CubeSats**. The research will focus on **designing**, **prototyping**, and **validating novel sensor nodes**, their **integration into CubeSat platforms** and enabling **energy-efficient and real-time sensing for space-based Earth observation**. Candidates with a strong background in **electrical engineering**, **embedded systems**, **sensors**, **or hardware-software co-design** are encouraged to apply.

The successful candidate will contribute to research at the intersection of **embedded system design**, **sensing technologies**, **and space platforms**, with applications in **Earth monitoring**, **autonomous systems**, **and intelligent space technologies**.

Key research directions include:
- Design and integration of **embedded sensors** (*e.g.*, optical, radar, UWB, hyperspectral, or event-based cameras) for CubeSats.
- Hardware-software **co-design of CubeSat subsystems** for energy-efficient operation in constrained environments.
- **Onboard embedded AI** and real-time processing for intelligent data selection and compression.
- Development of **low-power architectures and novel materials** for compact and reliable sensing platforms.
- Optimization of **payload and sensor node design** for Earth observation missions.
- Experimental **validation on prototypes and lab-based CubeSat demonstrators**.

This project offers the opportunity to contribute to the **next generation of CubeSat sensing systems**, enabling **accurate**, **energy-efficient**, **and scalable Earth observation from space**.

* Come as you are – we value and promote diversity in our team. Each individual is encouraged to reach their full potential, realize ideas and seize opportunities. Regardless of age, skin color, religion, gender, sexual orientation or origin, we welcome applications from all people equally.

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Program Structure

IT:U offers a 4-year, structured PhD program.

In the first year, emphasis is placed on focused group work, research lab modules, and Project Integrated Courses (PICS). In addition, students will complete The first year concludes with a PhD Proposal Presentation. Over the next three years, students will develop and write their PhD theses. This is accompanied by interdisciplinary research seminars and work as a project assistant. The PhD program concludes after the 4th year with the submission and defense of the PhD thesis.

[Click here to view the curriculum.](#)

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We offer:

- A dynamic, interdisciplinary research environment.
- Opportunities to collaborate on **cutting-edge CubeSat prototypes and real-world space demonstrators**.
- A strong academic and industrial network across **embedded AI**, **space sensing**, **and Earth observation technologies**.

Find out more: https://itu-s3-lab.github.io

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Responsibilities & Tasks

- Conducting research.
- Writing academic publications.
- Attending national and international conferences.
- Collaborating with other research groups on an interdisciplinary basis.
- Performing auxiliary activities in academic teaching for up to 2 weekly credit hours.
- Helping file applications for third-party funding.
- Complying with the institution's academic standards and ethical guidelines.

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Skills & Qualifications

- Motivated, with a strong interest in the intersection of embedded systems, edge AI, and intelligent space technologies.
- A master's degree or equivalent in electrical engineering, computer science, or another relevant field.
- Programming skills and a solid understanding of hardware-software co-design.
- Experience with deep learning frameworks such as TensorFlow and PyTorch would be ideal.
- Working knowledge of spiking neural networks and compartmental models is a plus.
- The ability to work and think independently.
- Fluent in English (CEFR C1 or equivalent).

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What you can expect:

- Innovative and stimulating working conditions in an interdisciplinary, international research environment
- Office kitchen with complimentary basic supplies
- Climate Ticket Upper Austria (optimal public transportation connections)
- We offer a gross salary in line with the FWF salary rate of EUR 2.832,10 (30h).
- Optional supplementary contracts (teaching or research) to an extent of up to 10 hours may be discussed during the hiring process.

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How to apply:

Please fill in the online application form and upload your files at:
https://apply.it-u.at/

- Curriculum Vitae
- Bachelor's and master's diploma (or equivalent)
- Bachelor's and master's transcript of records
- Motivational letter
- Up to 3 contacts of professors/collaborators for recommendations

Your contact person
Bettina Mairhofer
study@it-u.at

DEADLINE: April 30th, 2026

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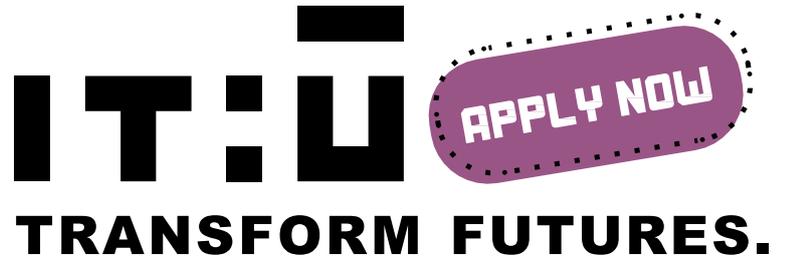
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3 PhD Positions

Quantum Information Theory & Experiment

IT:U Doctoral School - PhD Program COMPUTATIONAL X

3 PhD positions | 30h/week | Up to 4 years | On-site in Linz (AT) | Start Date: October 2026

Field of Research and Scope

Next-generation quantum computers must handle tens to hundreds of qubits/qudits, pushing into regimes where current methods for certifying multipartite, high-dimensional quantum resources no longer scale. Key challenges include the lack of scalable benchmarks and theoretical figures of merit that remain well-behaved in large, high-dimensional systems, the difficulty of maintaining stable calibrations during extensive data acquisition, and the need to harness these systems for practical applications such as quantum key distribution and human imaging with high-energy photons.

We are an interdisciplinary team (see [Quantum Information and Quantum Technologies | IT:U](#)) spanning experimental quantum physics, theoretical quantum physics, medical applications, and computing. We seek highly motivated PhD students who will pursue a defined project while contributing to the group's shared goals. Available projects include:

1. Theoretical quantum information: develop and analyze theoretical quantities characterizing quantum properties (e.g., entanglement), with an emphasis on experimental implementability and validation.
2. High-energy photons for applications: extract information from existing and dedicated experiments and explore how these insights can be leveraged for medical applications.
3. Orbital angular momentum (OAM) entangled multipartite photons: conduct experimental research involving OAM-entangled states, including hands-on laboratory work.

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[Click here to view the curriculum.](#)

Opportunities offered

- Collaborations: Expected are collaborations with all group members. In addition, our group enjoys close collaborations with other IT:U groups and is connected worldwide.
- International mobility and exchange: Selected candidates will benefit from interactions with the PI's collaborators and colleagues in Europe, North America and Asia, who are happy to host PhD students for short stays.
- Professional and personal development: With the PI's experience navigating academia in different countries, doctoral students will receive comprehensive guidance throughout their academic journey at IT:U and beyond.

Responsibilities and Tasks

- conducting research
- writing academic publications
- attending national and international conferences
- collaborating with other research groups on an interdisciplinary basis
- performing auxiliary activities in academic teaching for up to 2 weekly credit hours
- helping to file applications for third-party funding
- complying with the institution's academic standards and ethical guidelines

Skills and Qualifications needed

- Highly motivated, with a strong interest in the intersection of mathematics, experimental and theoretical quantum physics and computing
- Highly motivated in developing and conducting teaching and outreach projects
- A degree equivalent to a master's degree in physics, mathematics, computer science, or other relevant fields
- Basics in quantum physics
- Programming skills and a solid understanding of computational modeling
- The ability to work and think independently
- Fluent in English (CEFR C1)

What you can expect

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- Motivational letter (2 pages)
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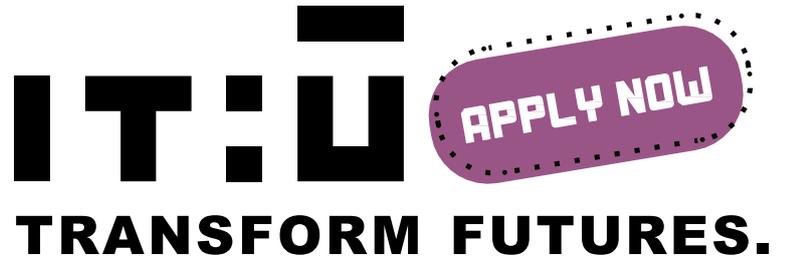
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2 PhD Positions
AI & Sustainability Policy Lab
IT:U Doctoral School - PhD Program COMPUTATIONAL X

2 PhD positions | 30h/week | Up to 4 years | On-site in Linz (AT) | Start Date: October 2026

Field of Research and Scope

The AI & Sustainability Policy Lab develops AI- and data-driven methods to design, evaluate, and scale effective climate and conservation policies. We combine causal inference, behavioral economics, and machine learning to support evidence-based sustainability transitions. Climate change and biodiversity loss pose complex societal challenges that require both rigorous policy evaluation and advanced computational tools. In our lab, we are interested in (1) generating credible causal evidence on the environmental and socio-economic impacts of climate and conservation policies; (2) the development and application of machine learning methods to improve policy targeting, prediction, and heterogeneous treatment effect estimation; and (3) the integration of econometrics and AI to build transparent tools that support adaptive, evidence-based decision-making.

During their stay, the two PhD students will work collaboratively within a shared research agenda while pursuing complementary but independent topics. One position will focus primarily on causal policy evaluation using econometric methods, field and survey experiments, and quasi-experimental research designs. The other will focus on machine learning and AI methods for policy analysis, including causal machine learning, predictive modeling, and large-scale data integration. Research may involve theory, modeling, surveys, experiments, quasi-experimental designs, and computational methods, often in international, interdisciplinary, and transdisciplinary collaboration.

Program Structure

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Opportunities offered

- Collaborations: The lab collaborates with international partners in academia, policy institutions, and sustainability organizations. The lab actively supports interdisciplinary co-supervision within IT:U and with external partners.
- International mobility and exchange: Candidates will benefit from international research exchanges with collaborating institutions across Europe and beyond. Short-term research stays and participation in international conferences are encouraged and supported.
- Professional and personal development: Doctoral students will receive structured mentoring in research design, publication strategy, grant writing, and science-to-policy translation. The lab emphasizes academic excellence, policy relevance, and the development of transferable skills for careers in academia, public institutions, or the private sector.

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Responsibilities and Tasks

- conducting research
- writing academic publications
- attending national and international conferences
- collaborating with other research groups on an interdisciplinary basis
- performing auxiliary activities in academic teaching for up to 2 weekly credit hours
- helping to file applications for third-party funding

- complying with the institution's academic standards and ethical guidelines

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Skills and Qualifications needed

We seek highly motivated candidates with a strong interest in the intersection of sustainability, policy, and computational methods.

Applicants should have:
- A degree equivalent to a master's degree in economics, data science, computer science, statistics, public policy, or a related field
- Strong quantitative and analytical skills
- Proficiency in programming (R or Python; Stata is an advantage for economics-focused applicants)
- Experience with empirical research (e.g., through a thesis or research project)
- The ability to work independently and collaboratively in an interdisciplinary environment
- Fluency in English

Depending on profile, the following expertise is expected:

For the economics-focused position:
- Advanced knowledge of applied econometrics and experimental/behavioral economics
- Experience with causal inference methods (e.g., RCTs, DiD, IV, panel models)
- Interest in policy design and evaluation

For the AI-focused position:
- Strong background in machine learning and statistical modeling
- Experience with ML frameworks such as PyTorch or TensorFlow
- Solid understanding of statistical learning and model evaluation

Strong assets for both profiles include:
- Experience with large-scale, geospatial, or text data
- Familiarity with causal machine learning
- Demonstrated interest in climate change, biodiversity, or sustainability policy

What you can expect

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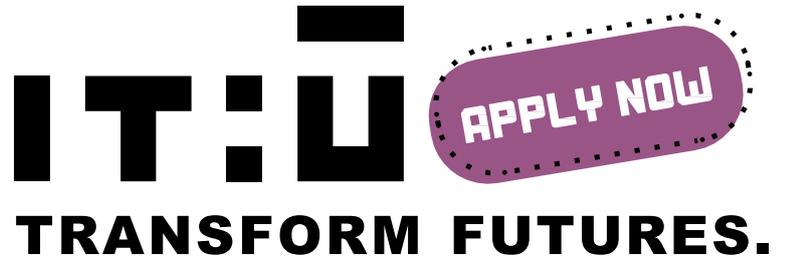
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DEADLINE: April 30th, 2026

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2 PhD Positions

Neurosymbolic AI for Trustworthy Systems

IT:U Doctoral School - PhD Program COMPUTATIONAL X

2 PhD positions | 30h/week | Up to 4 years | On-site in Linz (AT) | Start Date: October 2026

Neurosymbolic AI for Trustworthy Systems and Sustainable Industries

Despite remarkable advances in generative AI, building systems that are reliable and trustworthy in real-world deployments remains an open challenge. Current models frequently fail to respect hard constraints, lack grounding in verifiable knowledge, and produce opaque, unpredictable outcomes, limitations that are particularly problematic in safety-critical domains such as healthcare or industrial automation, and that undermine user trust in intelligent everyday environments. Neurosymbolic AI offers a path forward by integrating symbolic knowledge (e.g., logical rules and knowledge graphs) with subsymbolic approaches (e.g., neural networks), combining the flexibility of learning-based methods with the rigor and interpretability of symbolic reasoning.

The two PhD students will work collaboratively on related but independent research. The first will investigate how symbolic knowledge can be integrated into learning and inference (going beyond post-hoc constraints to actively shape how models reason and generalize) and will develop frameworks for selecting between symbolic, subsymbolic, and hybrid architectures, evaluated in real-world settings such as industrial automation and regulation-sensitive environments. The second PhD student will focus on the human side of trustworthy AI, designing neurosymbolic AI systems that interact with users in ways that are transparent, explainable, and privacy-respecting, addressing open challenges in multimodal perception, scalable reasoning, and personalization in smart environments.

Candidates with backgrounds in machine learning, symbolic AI, knowledge representation, human-computer interaction, or related areas are encouraged to apply.

Program Structure

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Opportunities offered

- Collaborations: The INSYT lab enjoys close collaborations with leading research labs across Europe, as well as strong industry connections providing direct access to real-world issues and possible test environments. The lab also collaborates with researchers within IT:U and supports co-supervision with other IT:U founding professors.
- International and interdisciplinary network: Selected candidates will benefit from an active research network spanning academia and industry, with particular strength in Switzerland and Italy through collaborations with institutions such as the University of St. Gallen, University of Lausanne, Università della Svizzera Italiana, Empa, and University of Bologna.
- Professional and personal development: As founding members of a new lab, the two PhD students will have a unique opportunity to help shape its research agenda and culture. They will receive close, hands-on mentorship drawing on the PI's broad international experience across multiple research environments in industry and academia and will be strongly supported and encouraged to publish at top venues and produce high-impact research.

Responsibilities and Tasks

- conducting research
- writing academic publications
- attending national and international conferences
- collaborating with other research groups on an interdisciplinary basis
- performing auxiliary activities in academic teaching for up to 2 weekly credit hours
- helping to file applications for third-party funding
- complying with the institution's academic standards and ethical guidelines

Skills and Qualifications needed

Required:
- A master's degree in computer science or a related field
- Programming proficiency
- Background in machine learning and knowledge of symbolic AI
- Strong written and oral communication skills in English (CEFR C1)
- Ability to work independently and take initiative in a research setting
- Ability to collaborate in an interdisciplinary team
- Strong interest in human-centered AI

Desirable:
- Experience with knowledge representation and reasoning (e.g., knowledge graphs, ontologies, inference rules, RDF, OWL, SPARQL)
- Experience with multimodal data (e.g., text, vision, or sensor data)
- Interest in the societal and practical implications of AI deployment in real-world environments

What you can expect

- Innovative and stimulating working conditions in an interdisciplinary, international research environment
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- Curriculum Vitae
- Bachelor's and master's diploma (or equivalent)
- Bachelor's and master's transcript of records
- Motivational letter (2 pages max, include your research interest and mention any research experience you might have had)
- Up to 3 contacts of professors/collaborators for recommendations

We look forward to receiving your online application.

Your contact person
Bettina Mairhofer
study@it-u.at

DEADLINE: April 30th, 2026
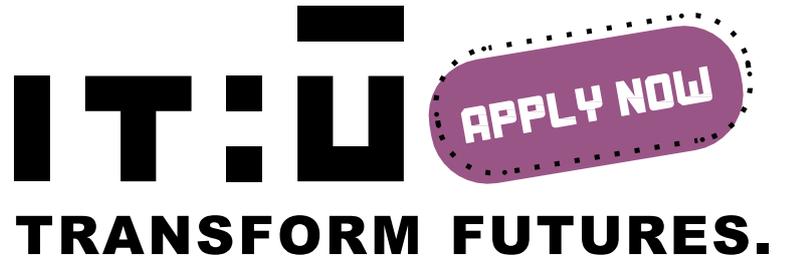
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3 PhD Positions
Digital Molecular Medicine
IT:U Doctoral School - PhD-Program COMPUTATIONAL X

3 PhD positions | 30h/week | Up to 4 years | On-site in Linz (AT) | Start Date: October 2026

Field of Research and Scope

Prof. Kristin Reiche is seeking PhD candidates to join her research group to advance precision medicine by connecting biomedical data science, medical bioinformatics, (research) software engineering and advanced molecular diagnostic tools.

Her group focuses on digital transformation in molecular medicine through research in:

- machine learning for (single-cell) multi-omics and spatial cell biology,
- patient-individual in silico models for risk and pathogenesis prediction,
- molecular biomarker discovery and validation, and
- software engineering and interoperability for medical bioinformatics.

Her research particularly targets advanced medical therapies like adoptive cellular immunotherapies, developing innovative digital solutions to understand their mechanisms of action aiming to advance personalized treatment strategies.

Program Structure

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Opportunities offered

- **Collaborations:** The group enjoys close collaborations with leading national and international research institutions. PhD students will participate in the EU-funded CERTAINTY project - A cellular immunotherapy virtual twin for personalized cancer treatment (https://www.certainty-virtualtwin.eu/) and collaborate with our clinical partners in immuno-oncology and oncology. The lab also collaborates with researchers within IT:U and supports co-supervision with other IT:U founding professors.
- **International mobility and exchange:** Selected candidates will benefit from interactions with the PI's collaborators and colleagues in Europe and North America and will have access to international research networks in precision medicine and medical bioinformatics, opportunities to present research at leading international conferences, and potential research stays at international partner institutions, who are happy to host PhD students for short stays.
- **Professional and personal development:** Work in an innovative, interdisciplinary team at the intersection of data science, biomedicine, bioinformatics, molecular diagnostics and software engineering. Contribute to translational research with direct clinical impact. Develop and/or deepen your expertise in bioinformatics and machine learning for single-cell multi-omics, spatial transcriptomics, and biomarker development. Shape your research profile in digital molecular medicine.

Responsibilities and Tasks

- conducting research
- writing academic publications
- attending national and international conferences
- collaborating with other research groups on an interdisciplinary basis
- performing auxiliary activities in academic teaching for up to 2 weekly credit hours
- helping to file applications for third-party funding
- complying with the institution's academic standards and ethical guidelines

Skills and Qualifications needed

- You must have completed a master's degree (or equivalent) in computer science, bioinformatics, (computational) biological sciences, mathematics, physics, or other relevant fields.

Essential requirements:
- Solid foundation in machine learning (ML) and biomedical data science
- Good programming skills in Python and/or R, with familiarity with ML frameworks
- Experience with Unix/Linux environments and Git version control
- Understanding of fundamental concepts in genetics, molecular biology, and immunology
- Strong motivation to conduct cutting-edge research in digital molecular medicine
- Excellent communication and teamwork skills for interdisciplinary and international collaboration
- The ability to work and think independently
- Fluency in English (written and spoken – CEFR C1)

Preferred qualifications:
- Prior experience or coursework in bioinformatics or computational biology
- Hands-on experience with single-cell multi-omics and/or spatial transcriptomics data analysis
- Familiarity with deep learning frameworks (e.g. PyTorch, TensorFlow)

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- Bachelor's and master's diploma (or equivalent)
- Bachelor's and master's Transcript of Records
- Motivational letter (up to 2 pages)
- Up to 3 contacts of professors/collaborators for recommendations

We look forward to receiving your online application.

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Your contact person
Bettina Mairhofer
study@it-u.at

DEADLINE: April 30th, 2026

* Come as you are – we value and promote diversity in our team. Each individual is encouraged to reach their full potential, realize ideas and seize opportunities. Regardless of age, skin color, religion, gender, sexual orientation or origin, we welcome applications from all people equally.