

Master's Student (m/f/d) – Internship

The Leibniz Institute for Food Systems Biology at the Technical University of Munich (Leibniz-LSB@TUM), a legal foundation under civil law based in Freising, is a prominent member of the Leibniz Association. Our institute integrates cutting-edge biomolecular research, bioinformatics, and high-performance analytical technologies to explore the complex interactions between the human organism and food components.

To strengthen our research group **Molecular Modeling / Section III**, we are currently looking for a committed master's thesis/internship student to start in November-December 2026 (flexible). The topic of the project is "Development of a Machine Learning Model for Taste Peptide Prediction".

About the Project

The project builds on the work "Bitter peptide prediction using graph neural networks" (Srivastava, P. et al., J. Cheminform. (2024)), which demonstrated the potential of graph neural networks to learn bitter taste-related properties from peptide structure. We are looking for a motivated master's thesis or internship student to develop a **machine-learning model for predicting taste qualities from peptide molecular structure**.

Understanding the relationship between molecular structure and sensory profiles remains challenging due to the chemical diversity of taste-active compounds. Machine learning provides a promising approach to decode this complexity. By learning relationships between molecular structure and taste activity, computational models can help predict taste properties and accelerate the identification of new taste-active compounds, ultimately supporting the development of future foods.

Key Responsibilities

- **Data curation:** Collect and prepare experimentally characterized taste active molecules.
- **Molecular representation:** Investigate representations based on molecular graphs, peptide sequences, molecular fingerprints, and physicochemical descriptors.
- **Model development:** Develop and compare machine-learning approaches, including graph neural networks (GNNs) and potentially other modern molecular machine-learning methods.
- **Model evaluation:** Benchmark models using appropriate validation strategies and performance metrics.
- **Interpretability:** Investigate which molecular substructures, amino-acid patterns, or other features contribute to umami predictions.

Your Profile

- Student specializing in bioinformatics, computational chemistry, computer science, data science, or a related field
- Good programming skills in Python
- Basic knowledge of machine learning and deep learning
- Interest in machine learning applications in food science
- Ability to work both independently and as part of a team
- Good English skills

What we offer

- A respectful and collegial working atmosphere

- An interesting and responsible field of work in the context of non-university cutting-edge research
- Flexible working hours with the option of mobile working (home office)
- A motivated team looking forward to welcoming you

Equal Opportunities and Diversity

Leibniz-LSB@TUM is committed to equal opportunities, diversity, and a respectful working environment. We welcome applications regardless of gender, nationality, ethnic or social origin, religion or belief, disability, age, or sexual orientation and identity.

Applicants with severe disabilities or those with equivalent status will be given preferential consideration in cases of essentially equal qualification (§ 2 SGB IX).

Contact and Application

For any inquiries regarding the advertised position, please contact:

Burcu Özer, b.oezer.leibniz-lsb@tum.de.

More information on the working group can be found here:

<https://www.leibniz-lsb.de/en/research/research-sections/section-iii>.

Please send your application, including a **short motivation letter (approximately half a page), CV, and transcript of records**, as a single PDF file and stating the reference number **2026-17-MM-ADP** via email to:

Burcu Özer (PhD Student) b.oezer.leibniz-lsb@tum.de and Katharina Ranner (Administration) recruiting.leibniz-lsb@tum.de.

We look forward to receiving your application!

Data Protection Notice:

As part of your application for a position at Leibniz-LSB@TUM, you will transmit personal data. Please refer to [our data protection information](#) in accordance with Article 13 of the General Data Protection Regulation (GDPR) regarding the collection and processing of personal data in the context of your application. By submitting your application, you confirm that you have taken note of the Leibniz-LSB@TUM data protection information.