Research Scientist for development of Digital Twins in food industry

Artificial intelligence (AI) is an increasingly important topic in both science and Industry 4.0. Modern analysis methods such as spectroscopy, together with AI, can make a safety and quality assessment of food quick and easy and thus make an important contribution to transparency and sustainability in the food industry. The food object is described by a digital twin which is a representation of a physical object through data, multi-scale probabilistic simulations, and mathematical equations. A digital twin can be connected to the real world via physical sensors (e.g., temperature sensors) and enables predictions about the development of a physical object. By feeding sensory data into the digital twin the physical and the virtual world are bridged. Building a digital twin for a biological object is a challenging task which requires an interdisciplinary approach and knowledge in machine learning, statistical data analysis, bio-chemical processes, microbiology, experimental design, image processing, spectroscopy, mathematical modelling, uncertainty quantification, to name just a few.

This position will be embedded in a larger endeavor which is coordinated by tsenso GmbH and in which we aim to use modern experimental techniques and develop digital twins for food products. The overarching goals of the project are to bring food modelling innovation to the market, hereby reducing food waste, improving the current food safety processes, and enhancing transparency for the consumer. The position is right at the interface between science and industry.

Requirements

For this position we request a solid background in mathematics, statistical methods, physics, and an understanding of and interest in biological processes.
An applicant needs:

- Ph.D. in Physics or Applied Mathematics
- True interest in biological problems
- Interest in start-up ecosystem and product-oriented research
- Experience in doing research in a multi-disciplinary team
- Excellent programming skills (e.g., C, C++, Python, etc.)
- Strong interest in combining different scientific disciplines to develop new insights
- Excellent command of the English language (German is not required)

Experience in two or more of the following is a strong plus:

- Chemometrics
- Image Recognition, especially Hyperspectral Imaging
- Systems Biology or Mathematical Biology
- Dynamic Systems
- Machine learning

We offer

Interesting and challenging problems in applied industrial research. Working at scientific problems in a small team. A monthly gross salary will be based on TV-L E13.

We are

Freiburg University

The Fleck group for Spatial Systems Biology is part of the Freiburg Center for Data Analysis and Modelling (FDM). Our research focus is on the analysis of dynamic biological networks. The position will be located at Freiburg University at the FDM.

tsenso GmbH

A Stuttgart based food-tech start-up providing cloud-based quality analytics for the food supply chain from farm to fork. The post-doctoral position will be funded by tsenso (www.tsenso.com).

Interested?

Please send a letter of motivation and a CV to: d.fleck@tsenso.com

Additional information

For more information about this position, please contact Christian Fleck who heads the Spatial Systems Biology Group at the FDM and is Head of R&D at tsenso GmbH (christian.fleck@fdm.uni-freiburg.de).