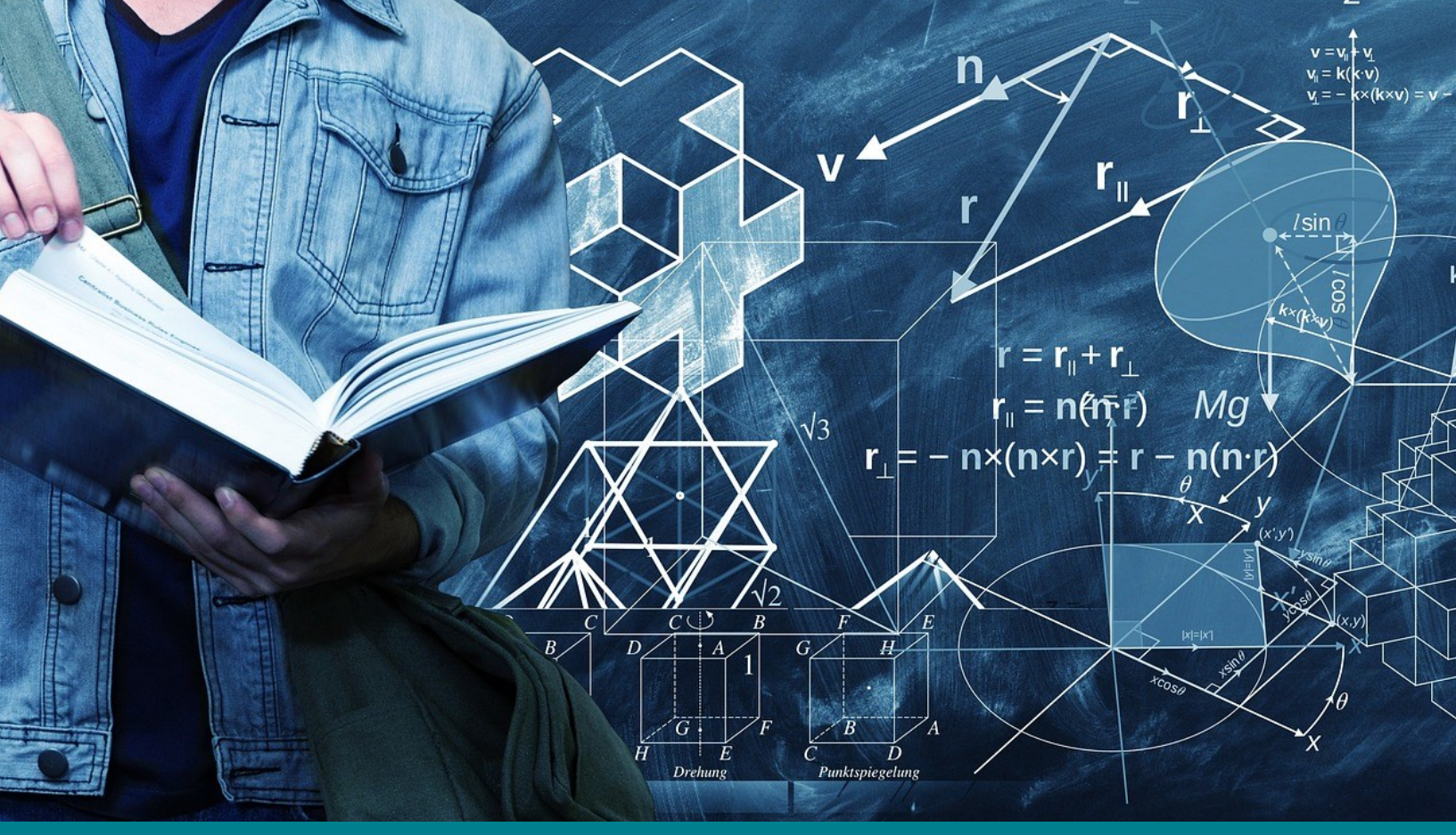


# INFERENCE IN MICROSCOPY

*Workshop for students, doctoral candidates, and researchers in physics and computer science*

**08.11.2022 | Jena**

In machine learning, we learn models from data by **training**. The models are used to answer queries, a process known as **inference**. While training large models is costly, inference can be even more so, because of a large number of queries. In this workshop, we want to explore inference challenges in microscopy and optical means for achieving faster and more cost-effective inference.

Participation is free of charge. However, due to a limited number of seats, we kindly request attendees to register in advance: https://indico.rz.uni-jena.de/e/inference.

## **Date:** Wednesday, 8th of November 2023

## **Venue:** Fürstengraben 27, Rosensäle of the Friedrich Schiller University, small meeting room

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| **14:15—14:25** | **Welcome and brief introduction to inference**<br>*Prof. Joachim Giesen*<br>*Theoretical Computer Science, Friedrich Schiller University Jena* |
| **14:25—14:55** | **Introduction to Bayesian methods**<br>*Prof. Michael Habeck*<br>*AG Microscopic Image Analysis, University Hospital - UKJ* |
| **14:55—15:25** | **Understanding Diffractive Deep Neural Networks**<br>*Dr. Sina Saravi*<br>*Abbe Center of Photonics, Friedrich Schiller University Jena* |
| **15:25—15:45** | **Coffee break** |
| **15:45—16:15** | **Investigating the geometry of molecular movement with MINFLUX microscopy enabled Single Particle Tracking**<br>*Bela Tristan Leander Vogler*<br>*Institute for Applied Optics and Biophysics, Friedrich Schiller University Jena* |
| **16:15—16:45** | **Combinations of Machine Learning and Statistical Modeling for the Interpretation of High Dimensional Microscopy Data**<br>*Dr. Carl-Magnus Svensson*<br>*Leibniz Institute for Natural Product Research and Infection Biology - "Hans-Knöll-Insititut" (HKI)* |
| **16:45—17:15** | **Deconvolution of optical microscopy images**<br>*Prof. Rainer Heintzmann*<br>*Leibniz Institute of Photonic Technology & Institute of Physical Chemistry, Friedrich Schiller University Jena* |
| **17:15—17:45** | **Get-together with Snacks** |

Layout: Olia Blacher, nach einer Vorlage der Abteilung Hochschulkommunikation | Foto: Gerd Altmann/Pixabay

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