



Postdoctoral position at the interface of Information Theory, High Dimensional Inference and Quantitative Genomics at the Institute of Science and Technology Austria (ISTA)

We are at the center of a revolution in information technology, with data being the most valuable commodity. The group of Prof. Marco Mondelli (<http://marcomondelli.com>) works to develop mathematically principled solutions to complex inference problems to exploit the currently exploding generation of high-dimensional data. The group of Prof. Matthew Robinson (<https://ist.ac.at/en/research/robinson-group/>) develops statistical models to understand the *quantitative genetics* of common disease and their age-at-onset in large-scale studies. Recent advances in Information Theory have provided surprisingly accurate answers to questions like: *What are the fundamental limits of inference from high-dimensional data? Are these limits achieved by efficient algorithms?* However, the existing theory focuses on the estimation of a single effect, in the presence of unstructured (i.i.d. Gaussian) measurements, which seriously hinders applicability to real-world scenarios. Through a focus on both theory and empirical application, we seek to develop a radically novel information-theoretic framework to (i) establish the fundamental limits of inference from genomic data, (ii) provide efficient algorithms reaching such limits for a range of long-standing problems in life-science and beyond.

We are looking for a **postdoctoral scholar** to join this collaboration. We will support candidates to apply for two upcoming junior fellowships offered at ISTA: the **NOMIS Fellowship** with deadline June 15th 2023, and the **IST-BRIDGE Fellowship** with deadline November 5th 2023. These fellowships provide the freedom to independently work on questions at the intersection of our two scientific disciplines in a unique environment, while also providing the security of scientific mentorship. We will assist the candidates to develop cross-disciplinary project proposals to be submitted to the funding calls.

A PhD in computer science, electrical engineering, applied mathematics or a related field is required. Strong analytical and/or computer coding skills are also necessary. The starting date is flexible.

IST Austria (<https://ist.ac.at>) is a young, public research institution with an integrated PhD-granting graduate school, located in Klosterneuburg on the outskirts of Vienna. It is dedicated to basic research and is committed to becoming a world-class research center offering an international, state-of-the-art environment for scientists of the natural sciences, mathematics, and computer science. By actively promoting cross-disciplinary collaborations, IST Austria aims at breaking down the traditional boundaries between disciplines. At IST Austria, diversity and inclusion are core values, and scientists are brought together from all over the world, with English being the working language.

Candidates are invited to send their questions and applications to marco.mondelli@ist.ac.at and matthew.robinson@ist.ac.at. The application should contain a CV, a publication list and a research statement. Our search will remain open prior to the deadlines, until suitable candidates are found.