



MAX-PLANCK-GESELLSCHAFT

The newly established **Physics for Inference and Optimization Group**, headed by **Caterina De Bacco**, within the **Cyber Valley** at the **Max Planck Institute for Intelligent Systems** in Tübingen is looking for PhD students in the area of machine learning, particularly in **routing optimization** and **optimal transport**, starting early 2019.

Our research aims to build general and flexible models at the interface between **Statistical Physics** and **Computer Science** to study application-oriented problems that involve experts from different disciplines. More specifically, we aim to develop models and methodologies to:

- perform routing optimization on networks
- that incorporates methods from statistical physics, e.g. message-passing algorithms as the cavity method, with approaches from optimal transport theory
- that allow for efficient algorithmic implementations

Main website: <http://cdebacco.com>

Department website: <https://pio.is.tue.mpg.de/>

We are looking for outstanding PhD candidates who hold a Master degree in Physics, Mathematics, Engineering, Computer Science, Statistics or related disciplines and with a strong background in statistical physics and probabilistic modeling, as well as good programming skills.

The successful PhD candidate will receive a PhD funding contract (initially for three years) equivalent in remuneration to pay group E13 65% of the Collective Wage Agreement for the Public Service. The starting date for the positions is flexible, ideally early 2019.

In addition, they have the possibility to enroll in the **International Max Planck Research School for Intelligent Systems** (<https://imprs.is.mpg.de/>) and to collaborate with the partners involved in Cyber Valley (<https://www.cyber-valley.de/en>).

The Max Planck Society is committed to increasing the number of individuals with disabilities in its workforce and therefore encourages applications from such qualified individuals. The Max Planck Society seeks to increase its diversity and therefore explicitly encourages both women and men, as well as applicants from different nationalities to apply.

Furthermore, it is committed to the reconciliation of career and family life and has at its disposal a comprehensive array of measures to promote and improve it.

We are hosted by the Cyber Valley at the MPI for Intelligent Systems in Tübingen, Germany. The institute is a world-class center for foundational research in machine learning, computer vision, robotics and material science. The majority of the institute's scientific employees come from outside of Germany. You will work among gifted students and experienced scientists from all over the world; and have access to excellent infrastructure, including several regular series of tutorials, lectures, journal clubs and invited talks by international guests. The working language at the institute is English.

Application

Your application should include a CV, 1-page covering letter, a list of at least 2 references, scanned transcripts, important papers (if available), major/internship reports (if available) and last thesis abstract (if available).

Please send the application material to Dr. Caterina De Bacco at caterina.debacco@tuebingen.mpg.de.

The deadline for applications is **Nov 9th 2018**.

For administrative questions please contact Mara Cascianelli at mara.cascianelli@tuebingen.mpg.de

