

Ferienakademie 2023

PhD Course of GS-IMTR

Victor van Santen and Bin Yang

General Information

Location

Rabensteinerhof, Mules, Sarntal, Italy

Duration

17.09.23 – 29.09.23

Lecturers

Stefan Wagner, Dirk Pflüger, Bin Yang

Guest lecturers for fireside evening

Matthias Sauer, Joachim Mörbt

Mentor

Victor van Santen

PhD Students

Maik Betka, Peter Domanski, Sebastian Hasler, Hanieh Jafarzadeh, Florian Klemme, Albi Mema, Tarek Mohamed, Karthik Pandaram, Marc Rivinius, Munazza Sayed, Thorben Schey, Denis Schwachhofer, Shuai Zhang

First Week

The 12 days of the Ferienakademie started off with presentations from the PhD students. Each of the 13 PhD students presented their work during the first week to introduce their project topic to the other PhD students. This was especially important, as there is now a new second generation of PhD students, which recently started and hence is unfamiliar with the graduate school (GS-IMTR). This round of presentations introduced the breadth of topics present within GS-IMTR from physics (semiconductor material science) over electrical engineering (circuit design) to computer science (machine learning) to these new students.

On the second day of the week, the PhD students participated in a peer-to-peer scientific writing course by Dr. Lucy Blaney-Laible. With humor and a deep understanding of the English language, Dr. Blaney-Laible provided the new generation of students with tips and tricks for writing their first publications. The older PhD students received advice which targeted dissertation writing. Regardless of the target text, a special focus of this course, was that each PhD student should identify and tackle his/her individual writing weak spots.

Due to bad weather in the first week, only a single hike was possible. On Wednesday, the group hiked from the “Penser Joch” to “Asten”. Different variants were offered to suit to the different fitness levels of the participants.

In the terms of entertainment in the evening, Victor van Santen provided a basic course in photography on the first night. In the following evenings, a lot of board games, table tennis and pool billiard matches were played to further strengthen the team building aspect of the Ferienakademie.

On Saturday the PhD students traveled by Bus to the city Bozen to visit the Ötzi Museum, the earth pyramids and explore the south Tirolian city itself.

Second Week

On Sunday we started a full day hike (approx. 20 km) from Reinswald over Latzfonsen Kreuz to Durnholzer Lake. Some PhD students were too tired and could not participate in the hike. It was a sunny day and we all had fun.

On Monday evening, two Advantest managers traveled to Sarntal as guest lecturers for a fireside evening, Matthias Sauer from Böblingen and Vice President of Customer Relations from Munich. They gave a fireside talk about Advantest, Semiconductor Testing and in particular their personal professional experiences, not only for our doctoral course, but also for the other parallel student course that lives in the same Jägerhof. They also answered various questions from the students.

Tuesday was dedicated to a Machine Learning Challenge organized by Advantest for our PhD students, mainly Yiwen Liao, a first generation PhD student from GS-IMTR and now a data scientist at Advantest and mentor for the P17 project. Yiwen Liao explained the machine learning challenge (wafer sort test) and the corresponding data set online. All doctoral students worked on the Machine Learning Challenge in different teams, submitted their solutions to a prepared cloud and presented their main ideas in an online session with Yiwen Liao and Sarah Rottacker. Different teams had varying degrees of success in validation accuracy, but all teams had issues with the provided test data set with a significant distribution shift (a wafer from a completely different production line than the training and validation data set). This emphasizes the relevance of domain generalization and domain adaptation of machine learning methods in practice. Overall, all doctoral students had fun and learned a lot from the challenge.

On Wednesday we did our last full-day hike. This time the route was Sarner Skihütte – Stoaerne Mandln – Auerne Alm – Sarner Skihütte, but in different variations, from 8 km to 25 km.

On the last working day, Thursday, the doctoral students elected a new speaker for the PhD, Thorben Schey. The new projects identified their role in the overall pipeline of semiconductor testing, and all doctoral students provided feedback to the Ferienakademie and expressed their upcoming collaboration and publication plans.

On Friday we took the bus back to Stuttgart.