Project MGK
Integrated Research Training Group
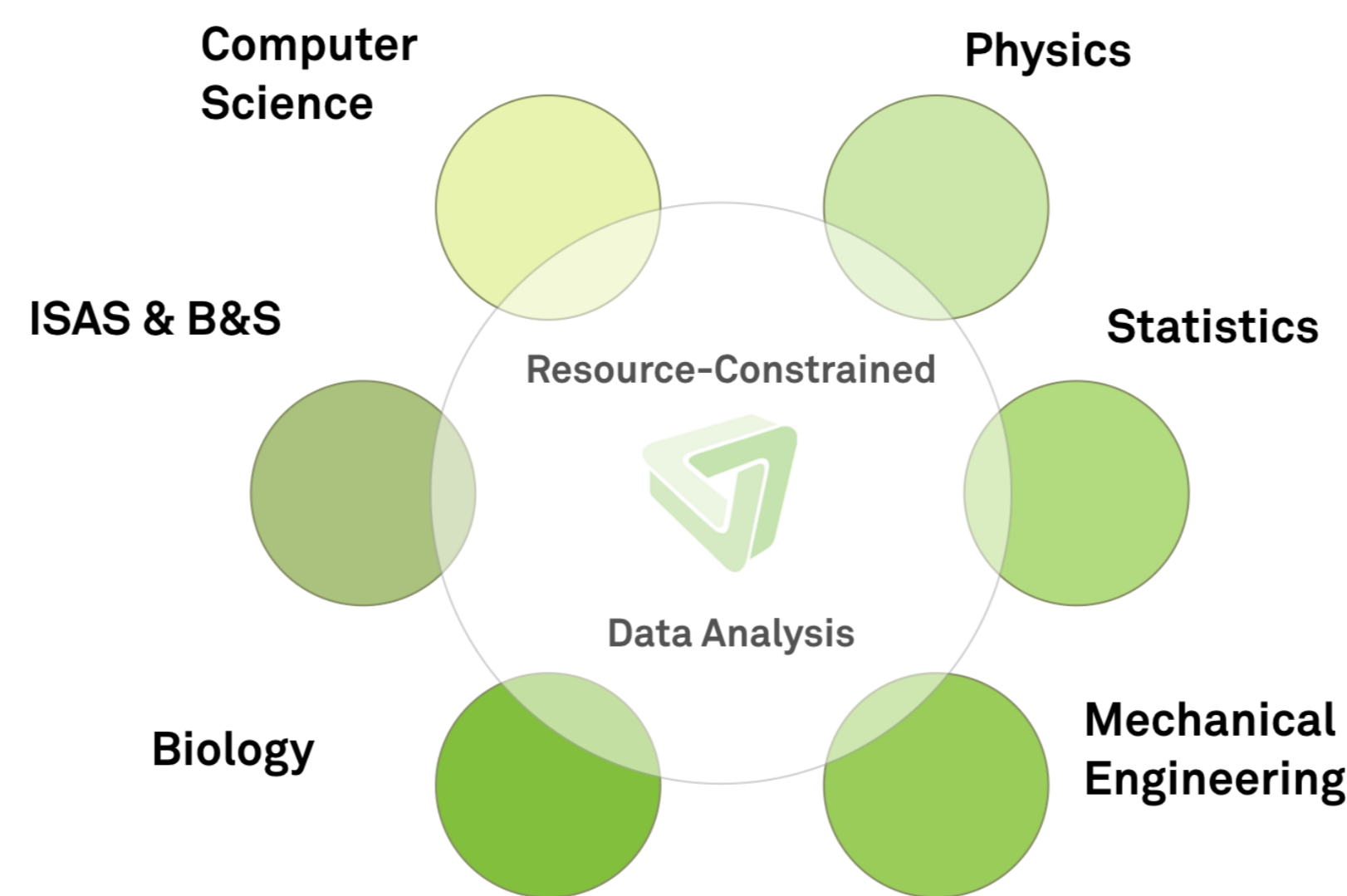### Prof. Dr. Dr. Wolfgang Rhode

Goals

Integrated Research Training Group

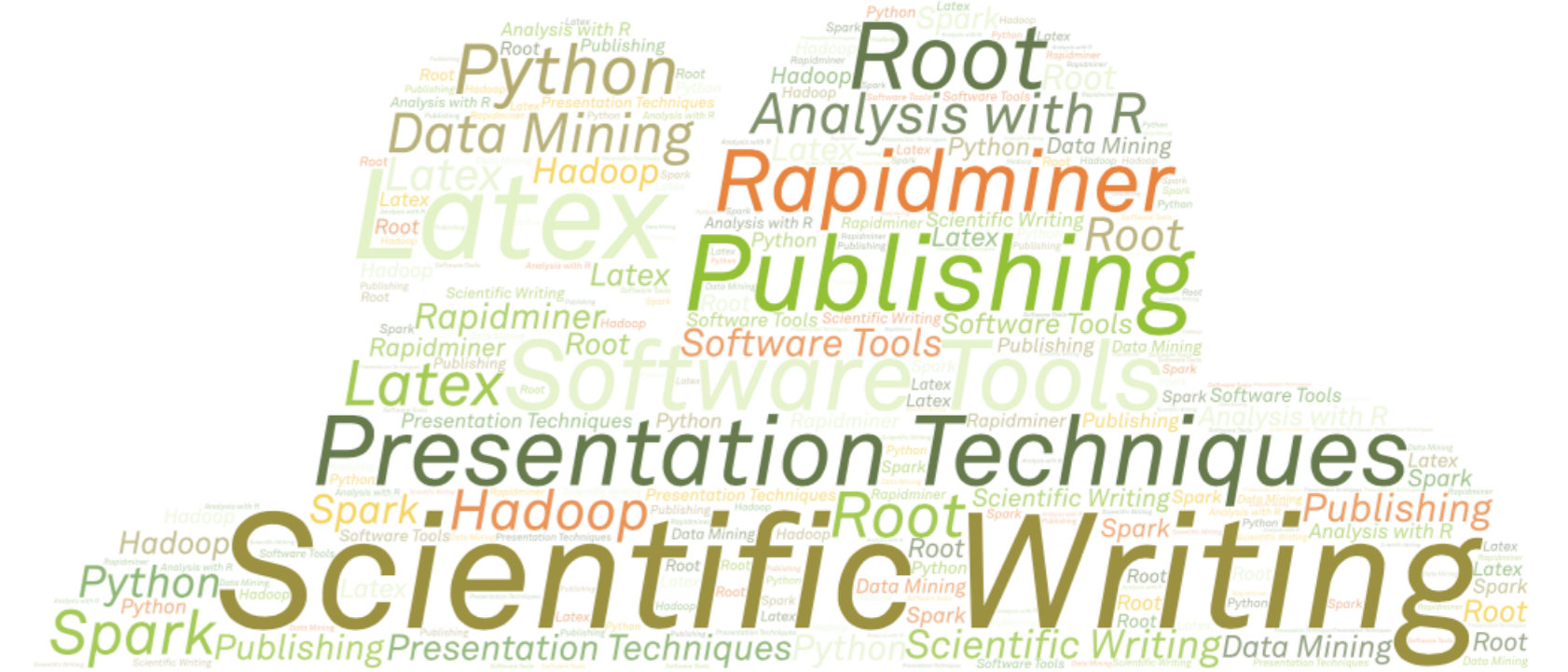**Teaching the rules of good, scientific work**

- ► Knowledge transfer between the disciplines
- ► Promotion of junior researchers in the international academic environment
- ► Networking of doctoral candidates
- ► Enhancing visibility in the international research community
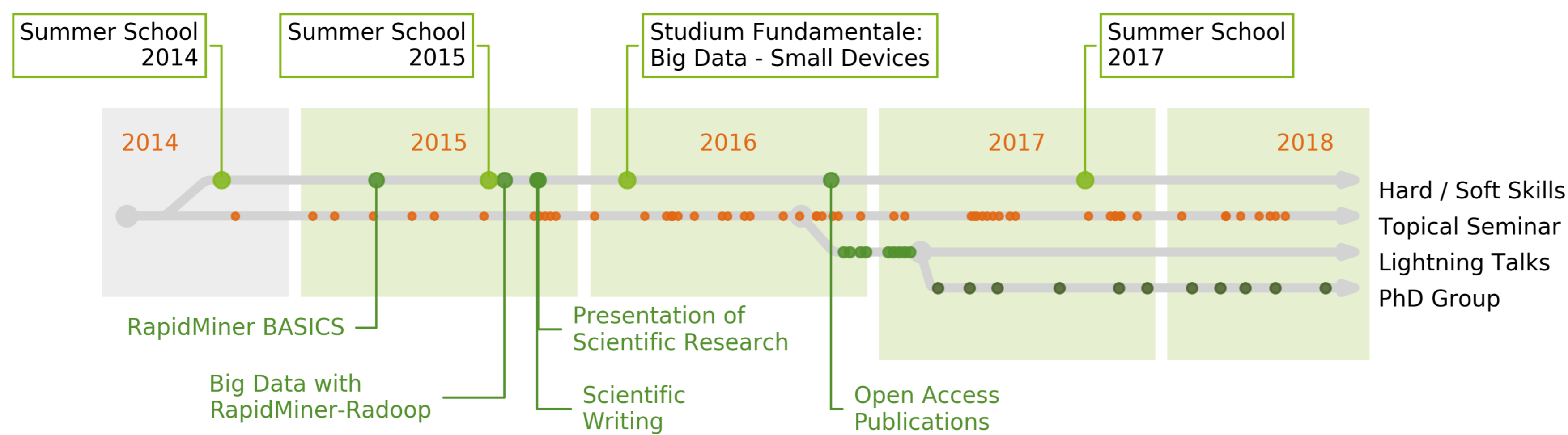
Interdisciplinarity & Exchange

Computer Science
Physics
Statistics
ISAS & B&S
Resource-Constrained Data Analysis
Mechanical Engineering
Biology

Hard Skills / Soft Skills

- ► **Foundation for successful research**
- ► **Capability of using relevant (software) tools**
- ► **Improving students' communication and cooperation skills**

Python, Root, Data Mining, Analysis with R, Latex, Rapidminer, Publishing, Software Tools, Presentation Techniques, Scientific Writing, Spark, Hadoop

Activities & Achievements

Activities of the CRC 876

Summer School 2014 · Summer School 2015 · Studium Fundamentale: Big Data - Small Devices · Summer School 2017

2014 · 2015 · 2016 · 2017 · 2018

Hard / Soft Skills
Topical Seminar
Lightning Talks
PhD Group

RapidMiner BASICS
Big Data with RapidMiner-Radoop
Presentation of Scientific Research
Scientific Writing
Open Access Publications

Studium Fundamentale: Big Data - Small Devices

- ► Insights into the work of CRC 876
- ► Students of all disciplines with interested in Big Data or distributed data analysis.
- ► Reference to different scenarios outside computer science

Main Topics:
Big Data, Cyber-Physical Systems, Industry 4.0

Lightning Talks

- ► Encourage (scientific) exchange of RTG members
- ► Reflect the diversity of research fields
- ► Collect needs of doctoral candidates

Approach:
- ► Weekly "blind date lighting talk" meetings
- ► Randomly select five students each week
- ► Exchange research: **One-minute lightning talks**
- ► Graduates' speakers lead the discussion

Achievements:
- ► (Continuous) contact of students at different stages
- ► Feedback about RTG and work in CRC
- ► Suggestions for additional support of students

PhD Students Group

Approach:
- ► Fixed collaboration group
- ► Monthly meetings: Time limit of 60 - 90 min.
- ► Continuous and more intensive exchange.

Contents and Activities:
- ► Reports (e.g. short presentations on specific topics)
- ► Review of own progress (e.g. paper, dissertation, software)
- ► Dedicated topics of Self-development: e.g. time management, situation analysis, publication strategies.
- ► Adress of topics where help is needed and mutual training among group members.

Summerschools

- ► International networking of doctoral students
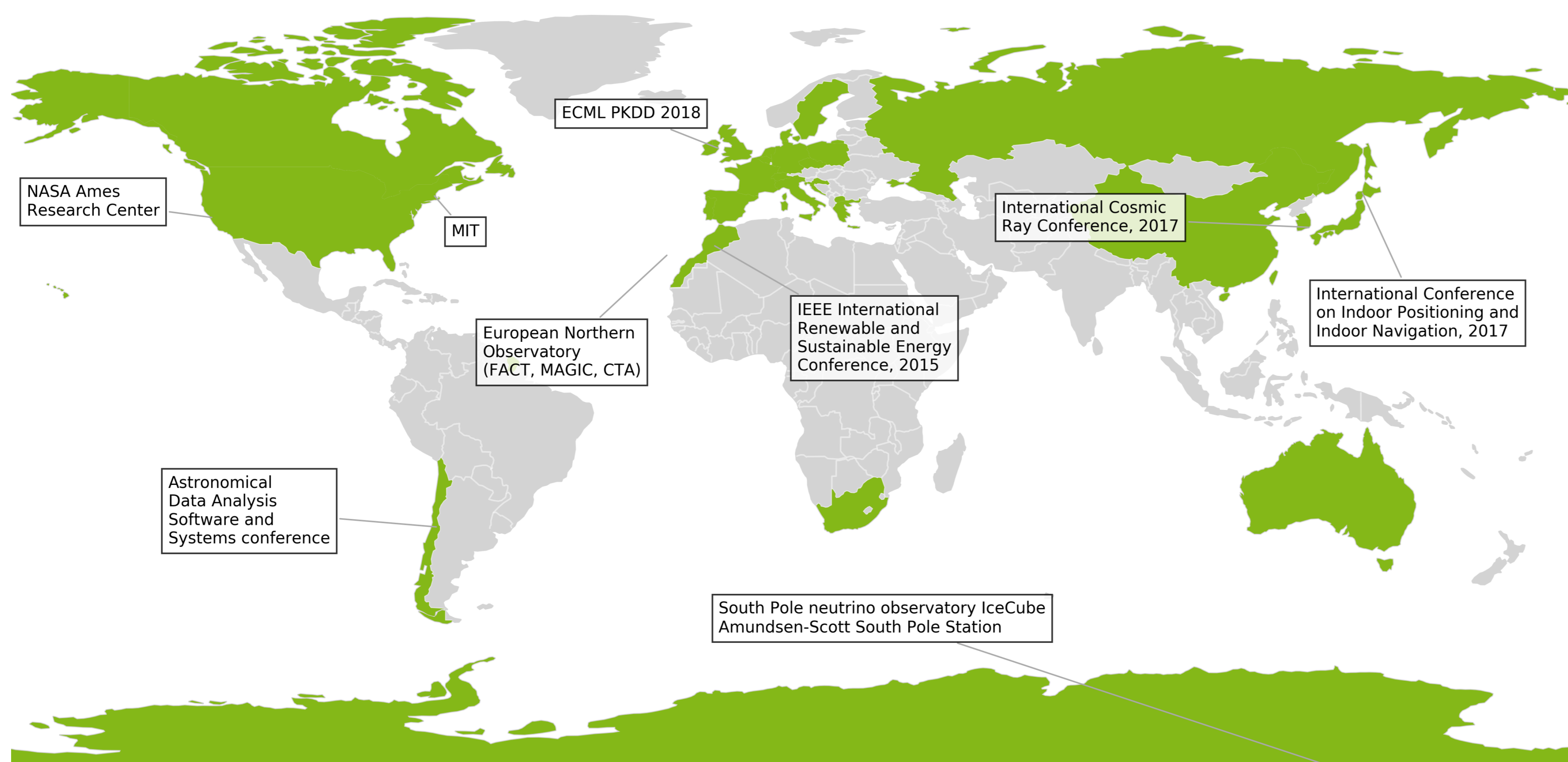- ► Specialized knowledge transfer directly from renowned scientists

Summerschool 2015: Porto (Coorganized)
Collocated with **ECML PKKD 2015**
Summerschool 2017: Dortmund
Ultra Low Power Learning:
Hackathon combining ML and CPS knowledge

Visibility in International Research

ECML PKDD 2018
NASA Ames Research Center
MIT
European Northern Observatory (FACT, MAGIC, CTA)
IEEE International Renewable and Sustainable Energy Conference, 2015
International Cosmic Ray Conference, 2017
International Conference on Indoor Positioning and Indoor Navigation, 2017
Astronomical Data Analysis Software and Systems conference
South Pole neutrino observatory IceCube Amundsen-Scott South Pole Station

Awards

- ► **Best Paper Award, IEEE RTCSA 2015**
- ► **Best Paper Award, ECML-PKDD 2015**
- ► **ABB-award 2016**
- ► **ITG Dissertation Award 2016**
- ► **Outstanding Paper Award, IEEE RTSS symposion 2016**
- ► **Best Contribution Award, OMNeT++ 2017**
- ► **Best Paper Award, BTW 2017**
- ► **Best Paper Award, IPIN 2017**
- ► **Best Paper Award, WABI 2017**
- ► **Best Student Paper Award, BTW 2017**
- ► **Hans-Uhde Award 2017**
- ► **Best Paper Award, BIOSIGNALS 2018**
- ► **Best Student Paper Award, IEEE VTC-Spring 2018**
- ► **William C. Carter Award 2018**