# Annual Report

September 2017     No. 2

**SFB-TRR 161**
Quantitative Methods for Visual Computing
Transregional Collaborative Research Center



Photo: Jens Gerken

## Content

The SFB-TRR 161 "Quantitative Methods for Visual Computing" is a Transregioal Collaborative Research Center. Partner institutions are the Universities Stuttgart and Konstanz and the Max Planck Institute for Biological Cybernetics in Tübingen.

In this project, about 40 scientists are working together to establish quantification as a key ingredient of visual computing research. They see quantification as a cornerstone to further advance visual computing as an established and maturing research field.

Dear readers,

By now, the second year of our SFB-TRR 161 is over, and it is time to look back. The past year was filled with different scientific events, various guests visiting our projects, and deep engagements in the field of visual computing. We can report about more than 40 new scientific publications. Two of them received best paper awards and one a honorable mention. Two scientists got awards for their activities – an IBM Faculty Award for Melanie Herschel, and the Parasuraman Student Award for Menja Scheer. This shows that our efforts regarding quantification in visual computing start to produce good results.

Besides that, we got coverage of our research topics in the local and national press, e.g., in Bild der Wissenschaft, Spiegel Online, heise.de, and welt.de. Furthermore, our Visual Computing blog is growing. We are regularly posting about current research activities and results. These efforts make the visions and results of the SFB-TRR 161 visible to all interested people.

We also succesfully organized events, such as the Crowdsourcing and Uncertainty Workshop, Linguistic Tutorials in Konstanz, Workshops in China and Baltimore, and our Visual Computing Lecture Series.

Now, we should also take a look into the future. We already have to collect ideas for the next funding period, that will hopefully start in July 2019. Next year, we will shift our focus to the proposal for this second funding period. Besides that, a Visual Computing Symposium is planned to be located in Stuttgart in October 2018. That is another milestone during the first period of our SFB-TRR 161.

For now, enjoy this annual report and the status seminar 2017. We hope that you will collect a lot of ideas and have inspiring dialogs to be best prepared for the upcoming tasks. If you want to keep up with our activities, visit us on www.sfbtrr161.de or on twitter.de/sfbtrr161.

Best regards
Marcel Hlawatsch, Manager of the SFB-TRR 161

TRANSREGIO PARTNER

**Universität Stuttgart**

Universität Konstanz

Max-Planck-Institut für biologische Kybernetik

FUNDING BY

**DFG**

# RESEARCH

## ■ Second Lecture Series „Visual Computing"

In the **Winter Term 2016/17**, we could invite seven visual computing experts to Stuttgart and Konstanz. They talked about their newest experiences, challenges, and developments during our second lecture series "Visual Computing".



Michael Klein (above) and Gerhard Fischer during their talks in Stuttgart.

Among the speakers had been Soekhee Hong from Australia, Judith Redi from the Netherlands, Celine Coutrix and Petra Isenberg from France, and Marc Stamminger, Jörn Hurtienne, and Marcus Magnor from Germany. Michael Klein from Austria enriched the lecture series with his practical expertise as founder and professional in computer graphics.

Besides from the lecture series, there had been 12 further talks, among others by Sheelagh Carpendale from Canada, Gerhard Fischer from USA, or Christopher Collins from Canada.

Our next lecture series starts in October 2017. Please find further information about it on the last page of this annual report.

## ■ Tutorial on Data Quality in Italy

In **September 2017**, Melanie Herschel, principal investigator of project D03, and Floris Geerts a colleague from the University of Antwerp in Belgium, led a tutorial on Data Quality during the EDBT Summer School 2017 in Italy with about 100 participants.



**EDBT School 2017**
**Genova Nervi, Italy** September 4th-8th

This forum connects researchers and experts in the database area. This year's theme of the school was "Adding Value to Data". The scientific topics cover principles and solutions for adding value to data, that is, for supporting users in discovering, extracting, integrating, accessing and interpreting the data of relevance to their questions, while taking into account the role of the crowd and the impact of dirty data as well as the adoption of responsible data management and analysis processes.

In this tutorial, the participants discussed different causes and different types of dirty data and got an overview of approaches both from a theoretical and practical point of view.

❚ *Project D03* ❚ *Stuttgart*

## ■ ChinaVIS Workshop

The ChinaVis 2017 conference took place in **July 2017**, hosted in the coastal city of Qingdao in the Shandong Province. One day prior to the conference the China-Germany Visualization Workshop took place. The purpose of this workshop was to foster the collaboration between the relevant groups in China and Germany. Oliver Deussen was one of the main organizers of this workshop.



During the workshop, the participants had the chance to share their research through talks and poster sessions. In addition, Jean-Daniel Fekete, the leader of the AVIZ-Team at INRIA gave a keynote on "Visualization for the People", a second keynote was given by James Foley, professor at Georgia Tech, who highlighted various trends in information visualization and possible next steps for the field.

Several members of the SFB-TRR 161 from Konstanz and Stuttgart took part in the China-Germany Visualization Workshop and presented their current research results.
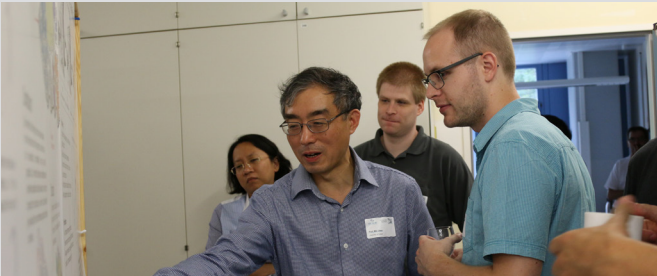
❚ *Projects A01, A02, A03, B01* ❚ *Konstanz, Stuttgart*

## ■ Uncertainty Workshop in Konstanz

"Uncertainty Visualization – From Uncertain Data to Uncertainty Theory" was the name of a SFB-TRR 161 workshop hosted in Konstanz in **July 2017**. The program consisted of three talks, a poster session and a group discussion about different questions regarding uncertainty visualisation. There was also a guided tour of Konstanz and dinner with all participants.

Prof. Min Chen from the University of Oxford, talked about a bottom up approach to explain the propagation of uncertainty from the data to the visualisation. He showed that the uncertainty typically decreases from the data alphabet, to the visualization alphabet, and further to the decision alphabet when the Shannon entropy is used to measure the uncertainty at different stages of a basic visualization process.



Prof. Min Chen discussing with the participants of the workshop.

On the other hand, Prof. Daniel Keim from the University of Konstanz used a model to explain the influence of uncertainty, within systems, on the trust the user has in the output. This model is more of a top down approach to explain the propagation of uncertainty within a system and led to a discussion about the two different approaches. The last talk was from Prof. Rüdiger Westermann from Munich and discussed the need for visualizing the uncertainty. In some cases, the uncertainty visualizations can obstruct important information.



About 20 scientists visited the University of Konstanz to listen to the talks and learn more about uncertainty visualization.

The workshop showed that there is still work to be done until we can quantify the extend of perceived uncertainty transported by a visualisation. The discussion about the two approaches, by Prof. Min Chen and Prof. Daniel Keim, showed that there is no perfect model that can explain the propagation of uncertainty from the data to the visualisation.

❚ *Div. projects* ❚ *Stuttgart, Konstanz*

## Lexical-Functional Grammar Conference 2017

The 22nd International Lexical Functional Grammar (LFG) Conference took place in Konstanz at the end of **July 2017**, organized among others by Miriam Butt and Christin Schätzle. Invited speakers had been Geoffrey K. Pullum (University of Edinburgh) and Pe-
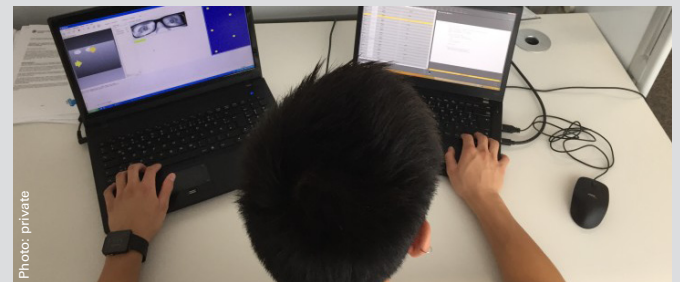
ter Sells (University of York). They talked about "The syntactic theory we all really want: some desiderata" and "C-structure heads and the limits of head mobility". Moreover, Prof. Butt gave an XLE Tutorial and presented – together with Christin Schätzle – current research results.

❚ *Projects D02* ❚ *Konstanz*

## Support for Master Student from Boston in Eye Tracking Research

**July 2017** | As already done last year, scientists from the HCI-lab in Stuttgart were engaged in the IRES Program ("International Research Experience for Students"). This program is organized by the University of New Hampshire and provides talented students and PhD students from the USA financial support for a summer working in the field of computer science in Germany. During two months they can develop and carry out a project under the supervision of academic staff at the Universities of Oldenburg and Stuttgart.



Photo: private

Calvin Liang working on his experiments at the HCI lab in Stuttgart.

This time, Jakob Karolus, was involved. He supported Calvin Liang, a master student from Boston who wanted to analyze programming language proficiency based on eye movements. Due to the intensive exchange of knowledge and experience in the field of eye tracking research, our guest could identify a research question, design an experiment around it, run studies, and perform data analysis.

❚ *Projects C02* ❚ *Stuttgart*

## Visual Analysis Insights at EuroVA in Barcelona

In **June 2017,** the SFB-TRR 161 again supported the International EuroVis Workshop on Visual Analytics (EuroVA), that was co-located with the EuroVis 2017 in Barcelona. The EuroVA 2017 covered a wide range of basic Visual Analysis research topics and project-driven application papers. 3 of the 13 papers focused on event sequence analysis. Besides, the publications included a State-of-the-Art Report in Integrating Machine Learning into Visual Analytics. Many other Visual Analysis related topics were discussed, including human-in-the-loop interfaces for cluster-,

# RESEARCH

classifier- and subspace analysis and geo-related analysis. Topics closely related to the SFB-TRR 161 were also featured.
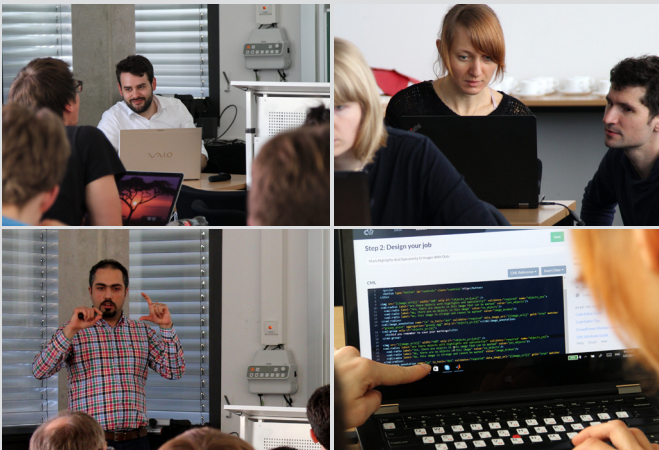


Photo: EuroVA

Raimund Dachselt during his keynote talk in Barcelona.

Keynote speaker Raimund Dachselt (Technische Universität Dresden) pointed to new and interesting research challenges that go hand in hand with Immerse Visual Analytics applications ranging from large, wall-screen sized displays, to tiny finger ring or smartwatch interfaces.

The EuroVA 2019 will be in Brno, Czech Republic.

## PhDs organized Crowdsourcing Workshop



**March 2017** | PhD students of the SFB-TRR 161 organized a Workshop on Crowdsourcing at the University of Konstanz. Franz Hahn and Vlad Hosu, who already used crowdsourcing for studies in their Transregio project with good results, introduced the use of CrowdFlower for quantitative user-studies.

The intention was to get participants familiar with the crowdsourcing platform and concept for user studies. All participants were able to design and run their own hands-on experiment, to get a better feel of the challenges and benefits of crowdsourcing.

❚ *Project A05*  ❚ *Konstanz*

## Physiological Sensing for Embodied Interaction

**March 2017** | In cooperation with the "GI-Fachgruppe Be-Greifbare Interaktion", Transregio members of the HCI research group in Stuttgart organized the annual Inventors-Workshop with the topic "Using Physiological Sensing for Embodied Interaction". In this workshop, basic concepts for sensing of human muscle activity had been introduced accompanied by a refreshing Keynote from Leonardo Gizzi.





The workshop provided a basic explanation of how physiological sensing works, introduced how it can be technically realized, and showed different applications and usage scenarios.



Additionally, the participants got a demonstration with a pre-programmed setup to get an idea of the working principle and the signal output that can be expected. Then teams defined their own ideas and worked towards a fully functional prototype. At the end of the workshop, each team presented what they had created.

❚ *Project C02*  ❚ *Stuttgart*

## Science Talk with Petra Isenberg



Photo: private

**February 2017** | Much can be read about women with academic science careers, but nothing helps more than a direct dialogue with women who already go this path of life. The University of Stuttgart offers a Mentoring Program for Women in Science with the aim to motivate and support outstanding female scientists in their academic careers.

As part of this program, the SFB-TRR 161 organized a discussion panel with Petra Isenberg – a research scientist at INRIA, Saclay, France.

About 10 students, doctoral candidates, and post-docs came to the Visualization Research Center in Stuttgart to listen to this Science Talk. They wanted to benefit from the experiences of a woman already working in research. Petra Isenberg talked about her current work, her special focus, as well as about her career path, and the efforts to reconcile her working and family life, especially during the turbulent times of paper deadlines, conference visits, or even research stays abroad.

During one hour a lot of questions were answered to support the female participants in their decisions about their further careers.
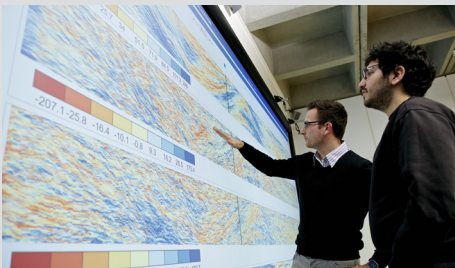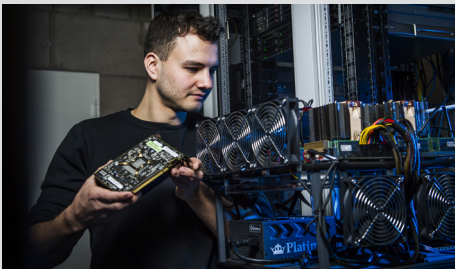
## ETVIS Workshop in Baltimore

In 2015, SFB-TRR 161 members organized the first Workshop on Eye Tracking and Visualization (ETVIS) as part of IEEE VIS. One year later, in **October 2016**, this workshop could be arranged by the organizers – among them Daniel Weiskopf and Lewis Chuang – a second time.

The vision behind this workshop is to establish a community of eye tracking researchers within the visualization community due to the growing interest in these research topics. More than 30 participants attended the ETVIS workshop that contained a keynote talk by Mary Hayhoe from Texas about understanding gaze control in the context of behavior, 17 talks as well as a discussion panel and enough time to deepen individual conversations.
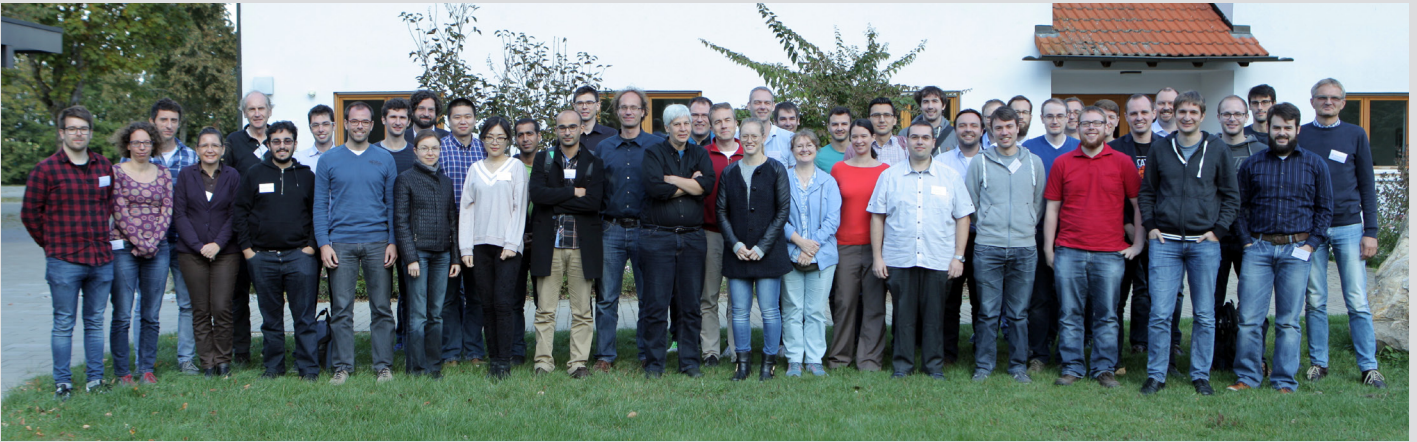
*Projects A01, B01, C03*          *Stuttgart, Tübingen*

## Visual Impressions from our Visual Computing Research



Photos: Max Kovalenko, Inka Reiter

# PEOPLE

## People Behind the SFB-TRR 161



Members of the SFB-TRR 161 during the Status Seminar 2016 in Blaubeuren.

## Ulrik Brandes Goes to the ETH Zürich



At the end of **October 2017**, Ulrik Brandes, principal investigater of Transregio project B02 will leave the University of Konstanz to continue his activities in ETH Zürich.

There, he will follow his special interest in how to reduce the gap between social science theory and data analytical methods as full professor of social networks.

## Albrecht Schmidt Goes to Munich



Albrecht Schmidt, principal investigator of project C02, accepted a call for a computer science professorship in the field of user-centered ubiquitous media at the Ludwig-Maximilians-Universität. Hence, he will move to Munich in **Oktober 2017** to continue his research and teaching activities.

## Call to the Heidelberg Rejected



Daniel Weiskopf, speaker of the SFB-TRR 161 and project investigator of projects A01, B01, MGK and Ö, got a call for a computer science professorship at the Heidelberg Institute for Theoretical Studies' (HITS) in **April 2017**.

Fortunately, this call could be rejected.

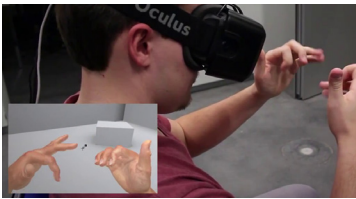## Personnel Changes in SFB-TRR 161

(since October 2016)

**NEW PEOPLE**

- Christiane Glatz (Tübingen, C03)
- Johannes Häußer (Konstanz, INF)
- Tanja Munz (Stuttgart, B01)
- Mereke Van Garderen (Konstanz, B02)

**ALUMNI**

- Susanne Becker (Stuttgart, D02)
- Michael Behrisch (Konstanz, A03)
- Jan Hildenbrand (Konstanz, B02)
- Alexander Jaeger (Konstanz, INF)
- Svenja Leifert (Konstanz, C01)
- Arlind Nocaj (Konstanz, B02)
- Menja Scheer (Tübingen, C03)
- Mario Schreiner (Konstanz, C01)
- Alexander Wender (Stuttgart, A06)
- Qian Zheng (Konstanz, A04)

## Honorable Mention Award for Transregio Scientists at CHI 2017



Congrats to the Human Computer Interaction Group from Stuttgart!

In **May 2017**, scientists of the Transregio project C04 attended at this year's ACM CHI Conference on Human Factors in Computing Systems (CHI'17) in Denver, that is one of the most important conferences in the field of Human Computer Interaction to present their latest research results. For their paper "These are not my hands!: Effect of Gender on the Perception of Avatar Hands in Virtual Reality", the HCI scientists Valentin Schwind, Pascal Knierim, Cagri Tasci, Patrick Franczak, Nico Haas and Niels Henze got an Honorable Mention Award.

❚ *Project C04*          ❚ *Stuttgart*

## Best Paper Award at IV 2017



**July 2017** | "A Visual Analytics Approach for Word Relevances in Multiple Texts" is the title of a Transregio publication that won the Best Paper Award of the IV 2017 in London. Reviewers honored this research work for the innovative contribution in terms of originality of concepts and application.

Congrats to the authors – Michael Burch, Nils Rodrigues and Daniel Weiskopf and their colleague Lorenzo Di Silvestro from the University of Catania!

❚ *Project B01*          ❚ *Stuttgart*

## Expressive 2017 Best Paper Award for Transregio paper



**July 2017** | The paper "FlowBrush: Optical Flow Art" was honored with a Best Paper Award at Expressive 2017 in Los Angeles. This Symposium on Computational Aesthetics Sketch-Based Interfaces, Modeling Non-Photorealistic, Animation and Rendering was co-located with SIGGRAPH 2017.

The honored paper presents a conversion tool that transforms motion input into artistic images. What the artist chooses for video input is completely free, leading to an infinite design space for new ideas to create content.

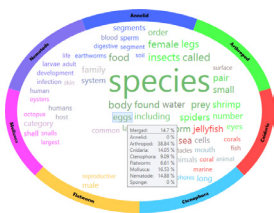❚ *Project B01, B04*          ❚ *Stuttgart*

## IBM Faculty Award for Melanie Herschel

In **March 2017**, Melanie Herschel received an IBM Faculty Award for her work in the area of "End-to-end provenance support for transparent data processing in complex data engineering pipelines". This prize refers on research activities, that the principal investigator of Transregio project D03 started in summer 2016 during her stay at IBM Research in Almaden (USA). With the prize money associated with the award, she plans to fund further research activities regarding provenance in data engineering pipelines.

❚ *Project D03*          ❚ *Stuttgart*

## Parasuraman Student Award for Menja Scheer



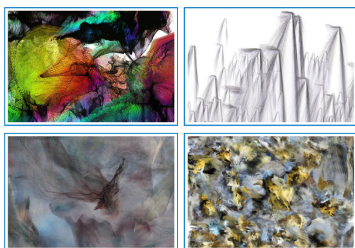**October 2016** | During the Neuroergonomics 2016 conference in Paris, Menja Scheer, PhD student in Lewis Chuang's project in Tübingen, received the Parasuraman Student Award. This award, named after Raja Parasuraman, who's pioneering work led the emergence of Neuroergonomics as a new scientific field, was lent for the first time.

With this honor, the community honors excellent results and scientists with a high level of commitment. Menja Scheer's paper „Attending to the auditory scene improves situational awareness" got a appreciable attention within the Neuroergonomics community.

❚ *Project C03*          ❚ *Tübingen*

## Best Paper Award at VISSOFT 2017

In **September 2017**, Christoph Schulz, researcher in Transregio project A01, visited China to present the results published in the paper "Visual Exploration of Memory Traces and Call Stacks" at the conference VISSOFT 2017. For this publication he received a Best Paper Award. Congratulations!

❚ *Project A01*          ❚ *Stuttgart*

# YOUNG ACADEMICS

## Graduate School and Speakers of the PhD students



Marcel Hlawatsch is the manager of the Graduate School of the SFB-TRR 161.

The doctoral students of our Transregio partners learn and do research together in the SFB-TRR 161 in pursuit of their doctoral degree in the field of visual computing. They all are members of the Graduate School of the SFB-TRR 161 – the interdisciplinary and international PhD Programme of our collaborative research project, that is coordinated by Marcel Hlawatsch. The aim of our Graduate School is to offer optimal conditions for successful PhD studies.

Once a year, all young academics elect two speakers of the PhD students as their representatives. During the first year of the SFB-TRR 161, Christoph Schulz and Menja Scheer assumed this task, followed by Jakob Karolus and Nina Flad who execute that role untill now.



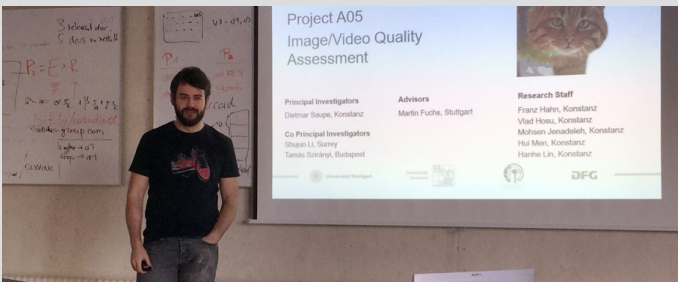Nina Flad and Jakob Karolus are currently the speakers of the SFB-TRR 161 PhD students.

They act as contact partners and provide support and assistance in doctoral thesis project-relevant problems and concerns. In addition, PhD student representatives organize workshops and seminars to provide an opportunity for all to get to know doctoral students from other groups, actively involve new and foreign doctoral candidates and exchange information and views in a relaxed setting.

During our this year's status seminar at the end of September, there will be new elections for the function of the PhD student's speakers.

## Winter School – PhD students Met in Austria

**May 2017** | Together with the Human-Computer-Interaction Group of the University of Stuttgart, the SFB-TRR 161 organized a Winter School in February at Söllerhaus (Kleinwalsertal, Austria).
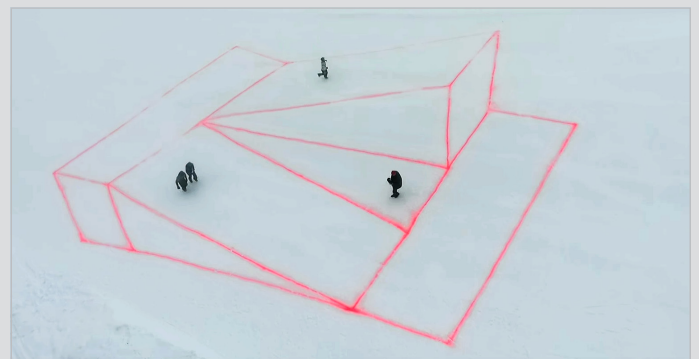
During three days, the Transregio PhD students from Stuttgart, Konstanz and Tübingen could intensify their cooperation, exchange knowledge and talk about their findings and newest developments. All participants gave talks and did some demonstrations.



In a group discussion the problem of correctly evaluating one's research work was addressed, e.g. whether a user study is the right approach compared to other evaluation methods, such as validation or a more formal verification of the system. The researcher shared aspects and methodologies from different fields, such as HCI and visualization, and exchanged ideas on usable security inspired by an invited talk from Florian Alt from the LMU in Munich.



During community ski sports they got to know each other better. Hopefully the Winter School led to new ideas about future work in the field of quantification in visual computing!



By the way, this 3D optical illusion art work was created by Juergen Scheible from the Stuttgart Media University, an invited guest, during the winter school week at Söllerhaus.

## Doctoral Retreat

In **September 2017,** the PhD students met again, this time in Freudenstadt. Occation for this meeting was the annual Docoral Retreat. The young academics held talks, learned from each other, and had the chance to exchange their experiences and knowledge in their special area of visual computing research. During a raft building, brewery visit and a social dinner they could deepen their work and collect ideas for collaboration works.



The PhD students of the SFB-TRR 161 during the Doctoral Retreat in Freudenstadt.

## Ten international PhD Fellows in Stuttgart and Kostanz Until Now

The SFB-TRR 161 offers short-term research fellowships for PhD students with a visual computing related topic. Until now, already 10 young academics took the chance to come to Stuttgart, Konstanz and Tübingen and joined several research teams within our collaborative project.

Our fellows came from UK, Chile, Switzerland, China, as well as from the USA to work on own ideas in the field of visual computing. Their stays lasted between four and twelve months. The fellows had been engaged among others in eye tracking, software visualization, visualization of porous media, data analysis, image quality assessment, driving cognition, and human computer interaction.

❚ *Project A02, A03, A04, A05, B01, C01, C02, C03, C04*
❚ *Stuttgart, Konstanz, Tübingen*

## First Milestone Presentation

**July 2017 |** Young academics, that want to receive a doctor's degree within the SFB-TRR 161, have to hold a milestone presentation about their current status of research after one and a half year after their project start. The first PhD student of our project, who held a milestone presenation, was Christoph Schulz from the University of Stuttgart. He successfully passed this kind of exam.

❚ *Project A01*                                    ❚ *Stuttgart*

## Guest Researcher in Image and Video Quality Assessment in Konstanz



From left to right: Domonkos Varga, Vlad Hosu, Hui Men, Dietmar Saupe, Franz Hahn, Hanhe Lin, Mohsen Jenadeleh.

In April and Mai 2017, **Domonkos Varga**, a PhD student at the Institute for Computer Science and Control, Hungarian Academy of Sciences (MTA SZTAKI) in the Machine Perception Laboratory (MPLab), visited the Transregio project A05 in Konstanz to meet our researchers and pursue his research work in image and video quality assessment.

❚ *Project A05*                                    ❚ *Konstanz*

## Research Stay at Oculus in USA

In July 2017, **Valentin Schwind**, PhD student in project C04 at the University of Stuttgart, went to Redmond, USA, for a research internship at Oculus. There, he is working in the field of virtual reality untill the end of September.

❚ *Project C04*                                    ❚ *Stuttgart*

# SCIENCE for the PUBLIC

## SFB-TRR 161 in Press & Media

Within the last year, various newspapers, magazins and online media published reports about the science topics, research activities and the people behind the work of the SFB-TRR 161. Subsequently, the public visibility of our project could be enhanced.
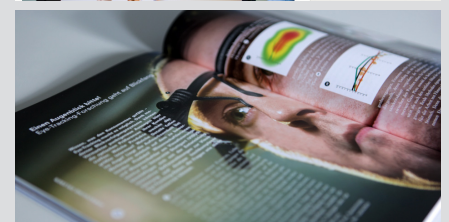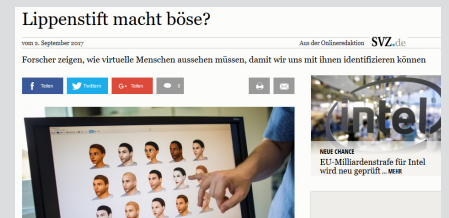
In March, we could point out an article of six pages about the visualization of big data amounts in the journal 'Bild der Wissenschaft', that has a circulation of approximately 75.000 exemplars.

Another topic that as been taken up had been the user studies of Niels Henze group regarding how we perceive virtual characters. Spiegel online, Heise, Welt as well as different local newspapers and online plattforms in Stuttgart as well as in Saxony, Mecklenburg-Western Pomerania, in the regions of Rhine-Main, Baltic Sea, or in Austria, reported about the activities of this Transregio project. Additionally, radioeins sent a broadcast about this topic.

Also a two pages report about eye tracking activities in "Forschung Leben" – the reserach magazine of the University of Stuttgart – in May with the title "Einen Augenblick bitte! Eye-Tracking-Forschung geht auf Blickfang" should be mentioned.

❚ *Project Ö, various projects*　　　❚ *Stuttgart, Konstanz, Tübingen*

## Four BOGYs in Stuttgart & Konstanz

We want to lead especially young people closer to visual computing. For that reason we offer BOGY internships for interested pupils of the 9th or 10th class level.

During the last year, we already could welcome three boys and one girl in our project. They already had experiences in programming and where able to develop own solutions under supervision of Transregio members. Aditionally, they got a lot of information about science live and current visual computing ideas and visions. Two of our trainees are even still active in Konstanz in a special program for talented pupils.

These are the BOGYs, that visited our scientists in Stuttgart and Konstanz.

Next guests are already waiting for their traineeship. In autumn we will welcome two pupils, and one in spring in Stuttgart.

A special thank gos to the scientists, who agreed to care for our guests and spend time to show them their work and to answer their questions!

❚ *Projects A01, A04, B01, B05, C02, INF, Ö*
❚ *Stuttgart, Konstanz*

## Our Blog is Growing!

**September 2017 |** The Visual Computing Blog started in November 2015. Within the first year of our blog's live, we established a basis with posts regarding science events, research trips or new results. By now, we can regularly provide information about our activities.

Currently we publish between tree and five posts per month. That is twice as much as before. While in 2016 we collected 30 blog posts during the whole year, this year we could count that number of articles already in August. During the last year, there was more than 3.100 visitors on our page with over 7.000 page views. The most read article was Liat Grayvers text about e-David and an exhibition in Leipzig, followed by Patrick Tutzauers contribution "How do people perceive buildings in virtual 3D cities?" and Johannes Zagermanns post about the CHI paper "Memory in Motion".

All blog posts are announced on our twitter channel, that has meanwhile 79 users. A short comparison: in 2016 we had only 46 followers. We hope that trend goes on!

❚ *All Transregio Projects*　　　❚ *Stuttgart, Konstanz, Tübingen*

# SCIENCE FOR THE PUBLIC

## ◼ Our Research on the MS-Wissenschaft 2018?



In 2018 the MS Wissenschaft will focus the topic "Working in Future".

The MS Wissenschaft is an exhibit ship sailing through Germany to bring research activities regarding socially relevant topics closer to citizens. Next year this exhibit will focus on "Working in the future", regarding e.g. health aspects, demographic changes, economy, psychology, as well as technique and digitalization. Expecially the last point fits together perfectly to sub-fields of the Transregio work. As we aim to make efforts in Visual Computing research more transparent to the general public, project Ö submitted an idea for an exponat for the tour 2018.

In October we will hopefully know wheater our submission was accepted, so we can start to realize our exponat in cooperation with project C01.

❚ *Project Ö, C01*          ❚ *Stuttgart, Konstanz*

## ◼ Events for the Public

To attract the general public to visual computing, the SFB-TRR 161 frequently offers workshops, demonstrations, or organizes public lectures. Here you find some impressions from our latest activities.
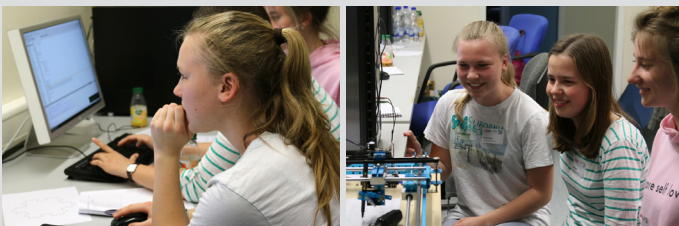
### Coding Courses for Girls



During the last week of the summer school holiday, the SFB-TRR 161 organized the workshop **"Digitale Bilder generieren"** in Stuttgart with 13 participants. In October the workshop **"Computergrafik mit Processing"** will start with probably 10 further girls.
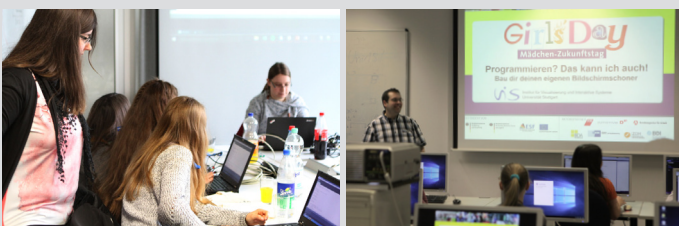
❚ *Project Ö*          ❚ *Stuttgart, Konstanz*

### Girl's Day in Stuttgart and Konstanz

This year 21 girls with interest in computer science visited the Girl's Day workshops offered by the SFB-TRR 161 with the aim to learn coding and get information about our research.



Konstanz, Workshop "Wie programmiert man eine Schneeflocke?", April 2017.



**Girls Day**, Stuttgart, Workshops "Programmieren mit Processing" and "Programmier dir deinen eigenen Bildschirmschoner", April 2017.

❚ *Project B01, C02, Ö*          ❚ *Stuttgart, Konstanz*

### "Informatiktag" – Coden, interactive Art & Lab Tour

For the second time, the SFB-TRR 161 participated with two workshops in the Informatiktag at the University of Stuttgart. During a processing workshop with Jakob Karolus, a Visualization Lab Tour with Valentin Bruder and Florian Fries and a demonstration of Kuno Kurzhals' FlowBrush application, around 35 girls and boys could gain insights into the field of visual computing.



**Informatiktag**, Stuttgart: FlowBrush Demonstration and Visualization Lab Tour, February 2017.

❚ *Project A01, A02, B01, C02, INF, Ö*          ❚ *Stuttgart*

### Presentation at the Universities' open-door days

During the 'Tag der Wissenschaft' in Stuttgart in July 2017, we exhibited developments in eye tracking and optical flow. At the Powerwall, our guests gazed at interactive visualizations and visual analytics solutions.



**Tag der Wissenschaft**, University of Stuttgart. Presentation of optical flow art, eye tracking, virtual hair stylist, and demonstrations at the VISUS Powerwall, July 2017.

❚ *Projects B04, INF, A01, B01, Ö*          ❚ *Stuttgart*

# UPCOMING EVENTS

## New Funding Proposal

**October 2018** | We have to prepare the funding proposal for the next funding period, that will hopefully start in July 2019.

To do this, we have the following time schedule:

- Spring 2018 – Transregio projects start to write their project proposal
- October 2018 – the management submits the funding proposal to the DFG
- Official review by the expert colleagues sent by the DFG
- Feedback by the DFG

Further information will be provided when required.

## Lecture Series "Visual Computing" in Winter Term 2017/18

In October our next Lecture Series "Visual Computing" starts. This is already the third Lecture Series organized in the first funding period of the SFB-TRR 161.

The first talk in winter term 2017/2018 will be hold by Uta Hinrichs, who is a lecturer at the School of Computer Science of the University of St Andrews, where she works at the Human Computer Interaction Group (SACHI).

Further dates and talks will be announced as usual.

## October 2018 in Stuttgart – Visual Computing Conference parired with VMV 2018 and GCPR

The second week in October 2018, the University of Stuttgart will welcome international scientists and professionals in the fields of visual computing, modeling, visualization and pattern recognition. Reason for this meeting are three different conferences that will be organized by the computer science department in Stuttgart.

Within the first two days the SFB-TRR 161 will organize a Visual Computing Conference with invited speakers in the research fields of our project.

Parallel the German Conference on Pattern Recognition (GCPR) will start their workshops and tutorials on Tuesday with about 130 additional scientists. On Wednesday, there is the opending of the International Symposium on Vision, Modeling and Visualization (VMV) that will run until Friday of that week.

Remember the following dates:

- **8 to 9 October 2018 – SFB-TRR 161 Conference**
- **9 to 12 October 2018 – GCPR 2018**
- **10 to 12 October 2018 – VMV 2018**

All SFB-TRR 161 members are invited to support and participate these events.

## Public Exhibition about Visual Computing

**Autumn 2018** | As part of the public relations activities of the SFB-TRR 161 we pomised to arrange a public exhibition to inform about the efforts and visions of our reserach project.

This exhibition is planned for autumn 2018. The idea is to set up a gallery with large format prints that show research results like visualizations, or photos, together with information about the challenges and efforts behind them.

Currently we are still in the process of collecting material. So if you have things that may be shown, it would be great if cou talk to project Ö.

*Projects Ö and others*          *Stuttgart, Konstanz, Tübingen*