Report on STACS'2025

42nd International Symposium on Theoretical Aspects of Computer Science
Jena, Germany, March 4 — 7, 2025

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The 42nd International Symposium on Theoretical Aspects of Computer Science (STACS) took place from March 4 to March 7, 2025, in Jena, Germany. As a pre-conference workshop, the Theory Day of the German Informatics Society took place on March 3 and 4. In this report, I want to share my personal experience attending the conference as a fourth-year PhD student.

The conference covered a wide variety of topics in theoretical computer science, organized in two parallel tracks. Track A, chaired by Nguyen Kim Thang and Michał Pilipczuk, focused on algorithms, data structures, and complexity, while track B, chaired by Olaf Beyersdorff and Elaine Pimentel, focused on automata, logic, semantics, and theory of programming. All talks had a length of 20 minutes, with sessions having four to five talks.

With the two tracks running in parallel in adjacent rooms, I was able to attend about half of the talks. From this sample, I want to highlight three presentations that stood out for their clarity, depth, and engaging delivery:

- "How to play the Accordion: Uniformity and the (non-)conservativity of the linear approximation of the λ-calculus" by Rémy Cerda
- "Residue Domination in Bounded-Treewidth Graphs" by Jakob Greilhuber
- "Toward Better Depth Lower Bounds: Strong Composition of XOR and a Random Function" by Ivan Mihajlin

In addition to the regular talks, the invited and tutorial presentations offered a broader perspective on current trends in theoretical computer science. There was a two-hour tutorial given by Albert Atserias on "Proof complexity and its relations to SAT solving" on Tuesday at the start of the conference. On Wednesday, Daniel Dadush gave the first of the invited talks with his algorithmically focused talk "A Strongly Polynomial Algorithm for Linear Programs with at most Two Non-zero Entries per Row or Column". On Thursday, Anupam Das' talk "Algebras for automata: reasoning with regularity" represented the logical aspects of the conference; and on Friday, Susanna F. de Rezende gave us insights into current complexity-theoretic research with her talk "Some Recent Advancements in Monotone Circuit Complexity".

Overall, the scientific programme struck a very pleasant balance between breadth and depth, offering something valuable for every participant.

Some interesting statistics on the conference were presented in the business meeting on Wednesday: Submission numbers were very high, track A received 202 submissions of which 55 were accepted, while track B received 57 submissions of which 17 were accepted. In total, there were 259 submissions, of which 72 were accepted, resulting in an acceptance rate of 28%. Submissions came from across the globe, with Germany and France slightly leading in numbers.

The co-location of the conference with the Theory Day also resulted in a high number of attendees for both venues, with 67 for Theory Day and 136 for STACS. Five papers were presented online in a live talk. Selected papers will be published in full on invitation to ACM Transactions on Computation Theory, Logical Methods in Computer Science, and, in outstanding cases, TheoretiCS. Finally, the next conference location was revealed to be Grenoble in France, as the host location of STACS alternates between France and Germany.

I was thoroughly impressed by the local arrangements. Jena is a smaller but very charming town in the east of Germany, and quite worth visiting. Thanks to the local organization committee chaired by Marlene Gründel, the conference was running very smoothly, to the point that for me, the fact that there were no noticeable issues became noticeable itself. The website was organized, which made it easy to get all the relevant information, and choose between the thoughtfully themed and titled sessions.

There were also plenty of occasions to get to know fellow researchers besides the scientific programme, such as the reception on Tuesday (which also featured a short theatrical performance given by the organizers), and the conference dinner on Thursday, both being warm and welcoming events that encouraged social interaction.

Besides this, the conference benefitted from an array of well-thought-out and playful ideas from the local organizers. Besides the usual flyers, we were gifted small puzzles at registration. A particularly delightful social game involved each participant receiving, along with their name tag, the name of a historical figure connected to Jena. The goal was to find your match – another attendee whose historical alter ego had some meaningful connection to yours. This creative activity helped break the ice and sparked many conversations. Background information and local context were provided on personalized flyers. Finally, the poster contained a “hidden message”, with the first person to decipher it being awarded a bottle of champagne at the conference dinner.

For me, all these activities (which I can only imagine entailing a tremendous amount of work to organize) elevated the conference from a place of valuable scientific exchange to a fun, social, and memorable event.

Overall, I enjoyed STACS 2025 very much, with ample opportunity to form

Figure 1: The logo of STACS 2025. Can you see the hidden message?

new connections, get new ideas for my research, and gain insight into other adjacent areas within theoretical computer science. For those still reading, I want to leave you with a small taste of the brain teasers we were enjoying: In Figure 1, you find the logo of the conference. In it, there is a hidden message. Can you solve the riddle?