Report: ATRIUM 3D Training School

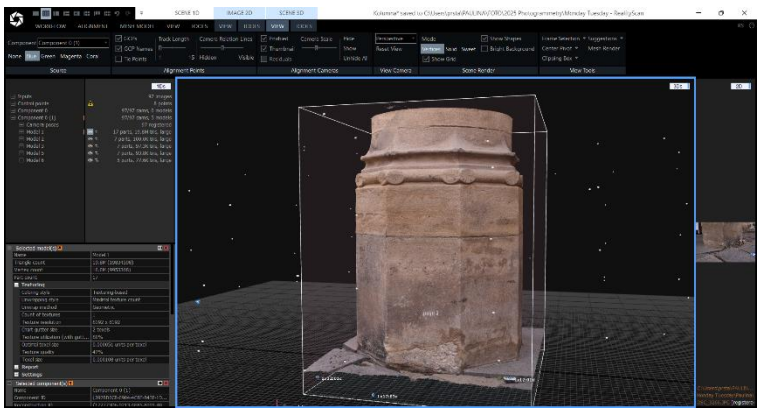
The ATRIUM 3D Training School took place in Brno, Czech Republic, from 15th to 19th September 2025. It was a one-week course dedicated to 3D models in archaeology, combining lectures, workshops, and hands-on practice.

Brno viewed from the Špilberk hill

I had the opportunity to participate in this event, held at the Institute of Archaeology of the Czech Academy of Sciences in Brno. My name is Paulina Staszkiewicz, I am a conservator and restorer of works of art, affiliated with the Polish Centre of Mediterranean Archaeology, University of Warsaw. My professional background is linked with archaeological expeditions in Egypt (Deir el-Bahari) and on Cyprus (Hala Sultan Tekke; Pyla-Kokkinokremos). Until now, my focus has mainly been on conservation of material heritage, but I wanted to expand my skills into 3D documentation, which is becoming increasingly important for both research and preservation.

The first day introduced us to the fundamental principles of 3D in archaeology. We were guided through the basics: point clouds, meshes, texturing, and how the whole process works from image capture to the creation of a digital model. In the afternoon, we moved to a photography workshop, as the quality of the photos determines the quality of the 3D model later on. It wasn't only about theory, but we could actually try out the camera settings in practice. The evening closed with a keynote lecture, which showed real examples of how different 3D technologies may be combined for documentation.

On the second day, we began with practical workshop around Petrov cathedral. After a short presentation on how to take photos for photogrammetry, we split into groups. Each group documented different architectural details, our photographed coat of arms and a base of a column. In the afternoon, we processed the photos in RealityScan. All steps were carefully explained on the screen, and we followed along on our computers. Whenever someone got lost, the organizers patiently helped before moving on. By the end of the day, some of us (myself included) had created our very first 3D models.

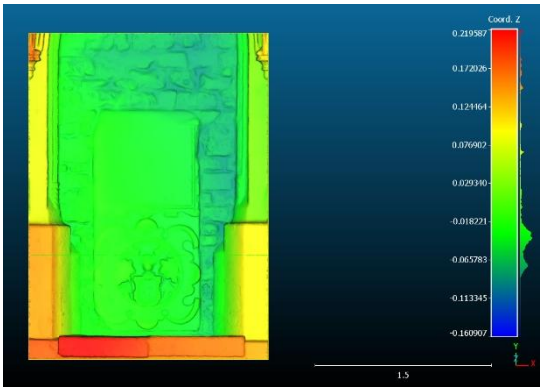


3D model of a base of a column created in RealityScan.

The third day focused on smaller-scale objects. At the Institute, we photographed artefacts using different setups: tripods, shadeless tents, turntables, but we also learned how to cope when such equipment isn't available. We could try out wireless laser scanner. In the afternoon, we worked with a pre-prepared dataset of artefact photos and processed them into 3D models. The day concluded with a social evening filled with good food, local beer, and plenty of lively discussions and intercultural exchange, which made the experience even more enjoyable.

3D documentation of artefact

Thursday focused on theory and was devoted to post-processing of models, reconstruction methods, and their applications in education, research, and heritage management. We listened to several lectures and case studies presented by experts.



Height map created in CloudCompare

On the final day, we had time for individual practice. In a group, we tried out the RTI method, which I found could be directly applicable in my conservation work. We were also introduced to Blender; and to CloudCompare, where we created height maps. This was exactly the kind of application I had hoped to learn, as I plan to use such tools on the reliefs in Hathor Shrine, where phases of destruction, recutting, and reworking of the carvings could be effectively visualized.

The organizers and lecturers were outstanding - special thanks to David Spáčil, Vojtěch Nosek and Tomáš Chlup, for being always patient, approachable, and willing to answer questions. They guided us step by step, shared tips and tricks, and made sure nobody was left behind. Their professionalism and generosity were truly appreciated. The group of participants was equally supportive and kind. Working in teams was a pleasure, and whenever someone had a problem, neighbors were ready to help. In our free time, we explored Brno: old town, the Capuchin crypt, and even stumbled into an Oktoberfest celebration in the city centre.

For me personally, this week was a very rewarding learning experience. I had no prior experience with 3D scanning or photogrammetry, but the practical workshops made these techniques accessible. I now feel confident to build on the skills I gained and to apply them in my work. I left Brno not only with new knowledge, but also with new colleagues, and a strong motivation to keep learning. Overall, the summer school was a great experience, well organized, rich in content, and delivered in a supportive atmosphere. I would be very glad to take part again.

Summer school participants and organizers at the Petrov cathedral