CS PhD Seminar Series

Apr 21st | 14:30-15:00 | Room 214

An Introduction to 3D Printing for Computer Scientists

This seminar explores 3D printing by revealing the computational pipeline behind it. Rather than focusing on hardware or materials, we adopt a "behind the slicer" approach, showing how a virtual CAD model becomes a physical object through algorithmic transformations. Starting from a triangular mesh representation, we trace the journey through the slicing software, the computational heart of 3D printing, examining the key algorithms that generate layer outlines, fill patterns, and support structures.We conclude by highlighting open research challenges, demonstrating that 3D printing remains a rich source of algorithmic problems.

Speaker: **Matteo Martini**

Matteo Martini is a third-year PhD student in Computer Science at the University of Genova. His research mainly focuses on the development of innovative rehabilitative solutions and assessment tools exploiting Virtual Reality, targeting individuals across a wide spectrum of needs, from severe motor and/or cognitive disabilities to less pronounced conditions such as anxiety disorders. His interests include eXtended Reality, Human-Computer Interaction, Visual Perception, and Serious Games. He holds both a Bachelor's and a Master's degree in Computer Science from the University of Genova. He is currently working at the Perception and Interaction Laboratory (PILab), under the supervision of Prof. Manuela Chessa and Prof. Danilo Pani (University of Cagliari). He likes to 3D print random stuff.