

## Fully funded Ph.D. position in: *“Appearance and Tactile Fabrication”*

The Perception, Display, and Fabrication Group at the University of Lugano in Switzerland is looking for Ph.D. candidates to work at the intersection of computer graphics, fabrication, and perception. The positions are fully-funded. We offer a competitive salary in line with Swiss universities.

**Research area:** Current multi-material 3D printers can deposit different materials with extremely high precision, creating objects with unseen geometrical details and mechanical properties. The freedom to create and to customize previously impossible to fabricate objects makes the additive manufacturing a key enabler for many applications. At the same time, the excellent capabilities of the fabrication devices open up many computational challenges regarding designing printable objects which can fully exploit the capabilities of these devices.

The goal of this research is to develop new computational fabrication techniques for creating and designing objects with complex appearance and tactile properties. More precisely, we would like to provide fine control over the look of the fabricated objects and how they feel when investigated using touch. Achieving this goal requires new algorithms for optimizing both the geometry of the objects (e.g., 3D printed microstructures) as well as the deposition of different 3D printing materials within the volume of fabricated objects. The techniques should also be inspired by insight from human visual and tactile perception to enable fabricating objects with optimal reproduction of desired properties. In this work, we will not limit our investigation to currently available 3D printers but will consider custom fabrication techniques that can be integrated into 3D printers in the future.

**Candidates** should have a Master degree in computer science or a closely related field. The course work, research expertise, and interests in one or more of the following areas are desired: computational fabrication, appearance modeling and reproduction, haptics, human perception, rendering, geometry processing, 3D printing. A successful candidate should have good math and programming skills as well as be fluent in both written and spoken English. Above all, the applicants should have a strong desire for research and publishing at top venues.

**Applications** should be sent directly to Prof. Piotr Didyk ([piotr.didyk@usi.ch](mailto:piotr.didyk@usi.ch)). The subject of the e-mail should start with the phrase “[Application]”. The documents should include:

- CV,
- transcripts of records (important for Ph.D. candidates),
- complete list of publications (important for Postdoc candidates),
- statement of purpose,
- contacts to 2-3 persons who agreed to write recommendation letters.

**The Faculty of Informatics at USI** is defined by its passion for scientific research. Around 200 top researchers from around the world conduct research in several computer science areas, with tens of millions of Swiss francs in competitive funding obtained to date. Over the years, the Faculty has become one of the leading research centers in Switzerland and an international point of reference in many fields.

### More information:

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