



ROB|ARCH 2018

Robotic Fabrication in Architecture, Art, and Design

CALL FOR WORKSHOPS

ROB|ARCH 2018 will convey a broad spectrum of artistic, scientific and entrepreneurial skills, strategies and principles of robotic fabrication in architecture, art, and design, linked with the aspiration to promote critical approaches, cooperation skills and creative applications not just in individual areas of knowledge, but also beyond. This cross-disciplinary approach complements the transformation processes that robotic research and creative industries are increasingly facing today in a globalised and interconnected world. As such, the conference and workshops will provide key insights into various theories, techniques and methods of robotic fabrication from a number of areas. It addresses key topics, within and outside the community: technological, cultural and demographic change, globalisation and sustainability, and combination of theory and practice, and, most importantly, redefining cross-disciplinary work in an era of global digitalisation and knowledge transfer.

The 2018 conference will take place at ETH Zurich and is proudly hosted by the National Centre of Competence in Research (NCCR) Digital Fabrication, a cross-disciplinary research network leading the development and integration of digital technologies within the field of architecture. Against this background the conference will provide an ideal setting for a series of interdisciplinary workshops pushing the boundaries of the state-of-the-art in robotic fabrication. The ROB|ARCH workshops will allow for hands-on experience with the most current robotic technologies, offer a unique platform for dissemination of new knowledge, and provide an opportunity for researchers, practitioners and industry leaders to share and exchange expertise, explore methods, compare techniques and create new connections.

Researchers and practitioners are invited to submit proposals for **two-day OR three-day workshops**, which will be held **September 10th – 12th, 2018**. The final selection of workshops will be made based on quality of submissions and the perceived interest to the ROB|ARCH community. Workshop proposals with strong cross-disciplinary trajectories that actively integrate experts from multiple fields are highly encouraged, e.g. in the form of collaborative experimentation, complementary fields of knowledge, combination of various technologies, etc, leading to exciting practical work and other outputs with high impact potential.

PROPOSAL FORMAT

Each of the following points should be addressed in the proposal.

- **Workshop Title:** A descriptive title for the workshop. This can be revised later.
- **Workshop Leaders:** A list of the workshop instructors and their relevant professional and/or institutional affiliations. Short bios are appreciated.
- **Workshop Description:** (100-150 words) A brief description of the focus, goals, format, methods, and expected outcomes of the workshop. Links to relevant papers or previous engagement in teaching are appreciated.
- **Participants' Involvement and Learning Goal:** The role of the participants and what they can expect to learn and achieve in the workshop should be clearly stated. Participants should be able to learn by developing, designing and fabricating artefacts or architectural constructs using explorative methods. Modes of participation may include software/hardware integration experiments, new material assembly processes, assisting in the fabrication of large-scale prototypes, or playful hacking of existing methods to invent new robotic fabrication modes, etc.
- **Infrastructure Requirements:** A description of the facilities, robot equipment, and technical support that the workshop desires or requires. Workshop proposals should define the minimal technical requirements, and are asked to make themselves aware of the facilities available at ETH Zurich through the NCCR Digital Fabrication. Workshop-specific robotic equipment may be available in coordination with

industry partners. An outline of available robotic equipment offered by the NCCR Digital Fabrication along with certain constraints can be found below.

- **Budget:** Each workshop will receive a lump sum of EUR 2000.- . Please include a proposed budget of costs for the workshop: e.g. materials, supplies, technology, travel costs, accommodation. Please also specifically note if any other sponsorship is expected to be available to you (as cash or in-kind contributions) for your workshop.
- **Software:** List the software that will be used during the workshop. Please indicate what hardware setup is required and if licenses can be distributed to participants.
- **Previous Knowledge Required/Recommended:** An outline of prerequisite required or recommended knowledge that the workshop relies upon.
- **Number of Participants:** The practical limit to the maximum or minimum number of participants.
- **Workshop Schedule:** The duration of the proposed workshops can be either two or three days to allow for differences in format, content and expected outcome. Please include a proposed workshop schedule.
- **Supporting information:** Drawings, photographs, links to videos, animations or any other media that illustrate the workshop's content, format, or intended output are useful. Such material should clarify the intentions and assist in the review and selection of workshops. Additional and revised material may be requested upon confirmation of selection.

SUBMISSIONS

Submissions are made via the following Dropbox link:

<https://www.dropbox.com/request/la4kfsidbeB7ctynMGv4>

Proposals should take the form of a single .pdf document that includes the information listed above, and is no more than 2 pages of text and 4 additional images (i.e. maximum 6 pages). Filenames should be formatted as:

RobArch2018_Workshop_[Workshop_Title].pdf

Any additional media file names should be similarly prefixed. An example proposal can be found attached.

TIMELINE

First call for workshops: **June 12th, 2017**

Second call for workshops: **mid-July, 2017**

Submission deadline: **September 15th, 2017 (EXTENDED DEADLINE!)**

Notification: **September 22nd, 2017**

INFORMATION AND CONTACT

See www.robarch2018.org for details and up-to-date information. For any questions regarding the workshops, please contact the workshop chair: Romana Rust workshops@robarch2018.org

AVAILABLE ROBOTIC SETUPS

The ETH Zurich and the NCCR Digital Fabrication is home to a wide variety of equipment and robotic setups at the Robotic Fabrication Laboratory, allowing for small- to large-scale robotic fabrication workshops. Workshop proposals can propose to integrate the following equipment (see certain restrictions to use in the note below) or propose to employ a different robotic setup. Workshop-specific robotic equipment may be made available in coordination with industry partners upon request.

- 1 x KUKA KMR iiwa
- 2 x KUKA Agilus
- 1 x KUKA KR 30 (or similar)
- 4 x (poss. collaborative) ABB IRB 4600-40/2.55 (40kg payload), on overhead, running gantry Güdel system *
- 2 x (poss. collaborative) ABB IRB 4600-40/2.55 (40kg payload) on ABB TrackMotion, linear axis 5 m (travelling distance excl. carriage) *
- 1 x ABB IRB 4600-40/2.55 (40kg payload), on mobile track platform *
- 6 x Universal Robots UR5 (5kg payload), stationary
- 3 x Universal Robots UR10 (10kg payload), on Güdel track system, vertical linear axis up to 3.8 m (travelling distance excl. carriage)
- 1 x Universal Robots UR10 (10kg payload), stationary
- 1 x ABB IRB 1600-8/1.45 (8kg payload, 1.45m reach) + Motor Type B Turn Table
- It may be possible to acquire and install additional robots from ABB, KUKA and Stäubli may be acquired based on demand, engagement of sponsors, and highly dependent on availability.

*** IMPORTANT NOTE:** The above indicated setups and the use of the accompanying equipment are only available for workshops offered by trained personnel from within the ETH Zurich due to safety and operational measures.