



# ROBJARCH 2016

Robotic Fabrication in Architecture, Art, and Design

## CALL FOR PAPERS

**WORKSHOPS: MARCH 15–17, 2016**

**CONFERENCE: MARCH 18–19, 2016**

**UNIVERSITY OF SYDNEY**

**[WWW.ROBARCH2016.ORG](http://WWW.ROBARCH2016.ORG)**

**[CHAIR@ROBARCH2016.ORG](mailto:CHAIR@ROBARCH2016.ORG)**

The adoption of digital fabrication in the creative industries continues to accelerate as the potential for innovation and creative expression using robotics is being harnessed. ROBJARCH2016 will provide hands-on experience with the most recent robotic technologies as well as a platform for dissemination and an opportunity for researchers and industry to exchange expertise, explore methods, compare techniques and forge new connections.

ROBJARCH is a bi-annual conference series on the use of robots and robotic fabrication in architecture, art and design. Initiated by the Association for Robots in Architecture it aims to link industry with cutting edge research institutions. In 2012 the conference was run by its founders in Vienna (Austria), it was then hosted by the University of Michigan (USA) in 2014. In 2016 the conference will travel to Australia where The Faculty of Architecture, Design and Planning at The University of Sydney is proud to be the host of the conference. ROBJARCH2016 seeks to bring together architects, artists, designers, fabricators, and industry leaders.

The organisers of ROBJARCH2016 invite authors to submit papers with original research relating to the use of robots in architecture, art, and design. The purpose of this year's conference is to advance the discourse surrounding robotic fabrication and creative robotics in its theme "Trajectories" – towards the integration of human-robot interactions informed by sensor input and real-time feedback in diverse environmental conditions.

ROBJARCH2016 will take place shortly before Easter 2016 in Sydney Australia, with Dagmar Reinhardt and Rob Saunders of the University of Sydney as conference chairs.

They are joined by Marjo Niemelä (University of Sydney), Mari Velonaki and Hank Haeusler (UNSW), Chris Knapp and Jonathan Nelson (Abedian School of Architecture, Bond University), Jane Burry, Roland Snooks, and Nicholas Williams (RMIT), Dave Pigram (UTS), and Tim Schork and Jon McCormack (Monash University) as co-chairs.

**Topics for papers include, but are not limited to, the following:**

- Robotic fabrication for architecture, art and design
- Creative robotics in architecture, art and design
- Design methods for robotics
- Stereotomy and stereolithography for robotics
- Cooperative robotic fabrication
- Prototyping with industrial tools
- Human-machine interfaces and interactions
- Realtime sensor feedback for fabrication and interaction
- Iterative learning in manufacturing
- Mobile and on-site robotics
- Cognition, behavioural and cognitive science in robotics
- Evolutionary and creative systems for robotics
- Machine learning and developmental robotics
- Social robotics and human-robot interaction

An international scientific committee consisting of researchers, designers, and architects will evaluate the papers and provide feedback to the authors. The selected papers will be published by Springer in the proceedings and presented at the conference in Sydney, Australia.

**Important dates:**

Abstract submission: May 15, 2015

Paper submission: June 15, 2015

Author notification: July 20, 2015

**About Sydney:**

Rob|Arch 2016 will take place shortly before Easter, giving participants the chance to explore Australia during the Easter holidays. As Australia's leading global city and a gateway to Asia, Sydney is the destination of choice for international corporations, business leaders, tourists and students. Sydney is a vibrant and creative centre, which provides a multitude of cultural attractions, such as the iconic Sydney Opera House, Sydney Harbour Bridge, Taronga Zoo, Museum of Contemporary Arts, NSW Art Gallery, Sydney Botanical Gardens, Darling Harbour and many more. Possible day trips from Sydney include excursions to the Royal National Park, Australia's capital city Canberra, the local wine-growing district in Hunter Valley, and the Blue Mountains—a World Heritage Area with a million hectares of sandstone cliffs, waterfalls and eucalypt forests to explore. In March, Sydney enjoys a sunny, Mediterranean-style climate with temperatures around 24-30° C (75-86° F).

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The 2016 ROB|ARCH conference seeks to advance the discourse surrounding robotic fabrication and creative robotics in its theme “Trajectories” – towards the integration of human-robot interactions informed by sensor input and real-time feedback in diverse environmental conditions.

With a focus on applied research and hands-on workshops, the conference will feature a series of workshops that are held in the historical building of Pier 2/3, Walsh Bay, Sydney. Aimed at exposing the advanced capabilities of applied robotic research, these workshops are planned as experimental laboratories where in the span of three days researchers, educators, practitioners and industry come together and a proposed research theme and question. A number of small, mobile robots will be aligned into parallel workshops in the former industrial hall. The challenge is here also to respond to limitations due to the heritage site, which excludes extraction or significant waste production. There is also an opportunity to design workshop proposals to take place at one of the Sydney Area co-hosting Universities, namely, the workshop facilities of The University of Sydney, UTS, or UNSW.

Following the workshops, the conference will span two days in Sydney, with ample opportunity to visit the Rocks, the Harbour Area, Utzon’s Opera, and many more. The internationally renowned publishing house Springer Wien/New York will publish and market the proceedings of the conference worldwide. For the 2016 event, we are again sending a call for workshop proposals.

**The conference invites proposals for workshops related to robotic programming and fabrication with the following topics:**

- Workflows, Networks, and Interfaces
- Design to robotic fabrication
- Digital and physical robotic interfaces
- Non-standard Robotic Fabrication
- “Smart” robotic fabrication
- Material feedback and robotic simulation
- Onsite Robotic Fabrication
- Physical Computing
- New robotic end-effectors
- Customized robotics
- Human-Robot Interactions
- Approaches to creative and social robotics
- Machine learning and developmental models

ROB|ARCH 2016 conference and workshops will allow practitioners to share expertise, to bring together teams of international researchers, to foster networks, to increase knowledge, and to stimulate innovation.

You are strongly encouraged to submit proposals of workshops that are conceptualized around the available resources of co-hosting workshop Universities, and furthermore to wherever possible, team up with one of the Australian hosts. Please see team descriptions, robots equipment and workshop facilities listed.

**Schedule:**

Workshop Proposal Submission: May 15th 2015

Workshop Dates: March 15th to 17th, 2016

Conference: March 18th and 19th, 2016

**Submission:**

Please submit your workshop proposal via eMail to [chair@robarch2016.org](mailto:chair@robarch2016.org). Provide information on the workshop topic, presenters, and a proposed schedule ([download example](#)) and compile it into no more than 2 pages of text and 4 additional images as a PDF (i.e. maximum 6 pages)

**Information and Contact**

See [www.robarch2016.org](http://www.robarch2016.org) for details and up-to-date information. For any questions regarding the ROB|ARCH 2016 conference, please contact [chair@robarch2016.org](mailto:chair@robarch2016.org)