

COMMUNITY NEWSLETTER

Dear subscribers,

Don't miss out in this issue: The [Integrative Demo of Aerial and Terrestrial Robots for Rescue Missions & Swiss Robotics Industry Day video](#).

Your Infoletter will be back in February 2018.

robotics+ Swiss National
Centre of Competence
in Research



We wish you a relaxing holiday and all the best for...

NCCR Robotics



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ROBOTICS WORLD

Top News

[Robots may save the global economy](#)

[FaSTrack: Ensuring safe real-time navigation of dynamic systems](#)

[Artificial muscles give soft robots superpowers](#)

[The stories we tell about technology: AI Narratives](#)

[Videos from the International Conference on Robot Learning](#)

World events

[SinoSwissAI 2017](#) (15 Dec)

[TEKNO International Industrial Trade Fair](#) (17-19 Dec)

[Artificial Intelligence: Insights into Our Future](#) (09 Jan)

[Semantics for Engineering and Robotics](#) (31 Jan - 02 Feb)

[ROBO Business Europe](#) (13-15 Feb)

[Robotics Slovenia](#) (12-15 Feb)

[HRI](#) (5-8 March)

[STIL](#) (01 March)

External calls

[European Robotics League](#) (local tournament)

LATEST NCCR NEWS

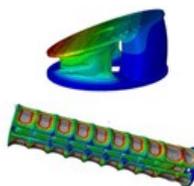
New NCCR Robotics associate PI

We are happy to announce that Prof. Laura Marchal-Crespo from [ARTORG Center for Biomedical Engineering Research](#), University of Bern, has joined our NCCR Robotics community as associate PI in December 2017. [Read more](#)



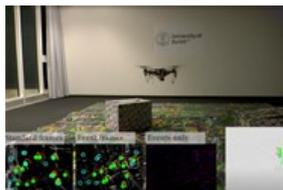
Modeling of new soft materials enables safe spinal assistance

Featured in the latest Nature Scientific Reports; New Finite Element Method (FEM) models predict behaviour of wearable robots to improve their design and performance... [Read more](#)



RPG drones use event cameras to fly faster and even in the dark!

First ever autonomous flight with an event camera, which demonstrates agile manoeuvres and flying in low-light environments. [Read more](#)



New NCCR Robotics Spin Fund

The NCCR Robotics Spin Fund committee has granted Hadrien Michaud the Spin Fund for [Feeltronix](#), hosted at [Lacour lab](#). Feeltronix recently received Venturekick stage 2. [Read more](#)



Varileg featured in the SUVA accident prevention campaign

Werner Witschi's story shows how [Gassert's lab](#) Varileg is used for rehabilitation situations. [Read more](#)



vanity is used for rehabilitation situations. [Read more](#)



Over 1000 teachers trained to use Thymio in Switzerland

Over the past 4 years over 1000 teachers in Switzerland have been trained to use [Thymio](#) in the classroom, more than half of them were trained last year alone, showing the rapid growth in interest.



CONGRATULATIONS

Margarita Chli wins Zonta Prize

Margarita was awarded the 2017 Zonta Prize for her research on machine vision. With this prize the Swiss Zonta Clubs honour women for their achievements in the scientific and technical field. [Read more](#)



Scaramuzza lab at IROS 2017

[Scaramuzza lab](#) was nominated for the Best Paper Award on Safety Security and Rescue Robotics Finalist and ranked 2nd at the IROS 2017 [Autonomous Drone Race](#).



MyoSwiss - Academia Industry Training Program in Brazil

NCCR Robotics Spin off MyoSwiss, were selected by Venturelab amongst 10 other Swiss Start-ups to take part in the Academia-Industry Training Program in Brazil early in December 2017. [Read more](#)



NCCR ROBOTICS CALLS

NSF ERA-NET CHIST-ERA

This year's call addresses: Object recognition and manipulation by robots; Data sharing and experiment reproducibility; and big data and process modelling for smart industry. Submission deadline: 11th Jan 2018. [Read more](#)



NCCR OPEN POSITIONS

Postdoc & PhD positions at Floreano lab

[Floreano lab](#) currently has 2 Postdoc positions in Multifunctional Drone Design and in Evolutionary Computation / Robotics and one PhD in Multi-Modal Aerial Robots. [Read more](#)



WE WILL BE AT:

Stéphanie Lacour's Inaugural lecture

31 January 2018

EPFL

[Read more](#)



European Robotics Forum

13-15 March 2018

Finland

[Read more](#)



Hannover Messe

HANNOVER MESSE 2018

[EXOberlin](#) (call for speakers)

[ICCS'18](#) (call for papers)

[IntelliSys](#) (call for papers)

[IROS](#) (various calls)

[ReMAR](#) (2nd call for papers)

[Rob Arch](#) (call for papers)

[ROBO Business Europe](#) (call for speakers)

[RO-MAN](#) (various calls)

[RoboSoft](#) (call for competition)

Start-up corner

Please find following links related to start-up support. If you would like to promote your events through our channel, please contact us at nccr-robotics@epfl.ch

[Applications open for the W.A. de Vigier Award - Startupticker.ch](#)

[Kickstart Accelerator – Robotics & Intelligent Systems](#) (offers mentoring in robotics and AI in Zürich)

[Venture Leaders Technology](#) (Silicon Valley)

[XGRANT Programme](#) (EPFL Bachelor and Master students)

[16 start-up metrics that you need to know](#)

External positions

[Associate or Senior Editor, Nature Machine Intelligence](#) (Nature Research)

[PhD Call: Advancing Autonomy in Aerial Robotics](#) (University of Nevada)

[Research Associate in Sensors and Offshore Robotics](#) (University of Edinburgh)

Interesting links

[The Seven Deadly Sins of AI Predictions](#)

NCCR Robotics Director

Prof. Dario Floreano

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IMPRESSUM

Publisher

NCCR Robotics Management Team



PRESS COVERAGE

ANYmal: A Ruggedized Quadrupedal Robot, with Marco Hutter

[Read more](#)



Silke, paraplégique depuis dix ans, a "la sensation d'être à nouveau dans le monde des valides"...

[Read more](#)



More [press coverage](#) available through [NCCR Robotics website](#)

NEW VIDEOS

Swiss Robotics Industry Day



Integrative Demo of Aerial and Terrestrial Robots for Rescue Missions 1st November 2017



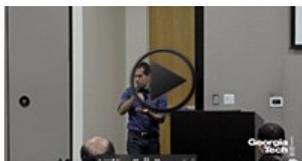
Hybrid, Frame and Event based VIO for Robust, Autonomous Navigation of Quadrotors



SUVA Kampagne Werner Witschi mit dem VariLeg Exoskelett - Der nächste Schritt



Autonomous, Agile, Vision-Controlled Drones: From Frame to Event Vision



IROS 2017 Autonomous Drone Race: Vision-based Navigation Running fully Onboard



Embark on a cognitive revolution at EPFL



RPG celebrates 5-year anniversary



NEW MEMBERS

Marko Bjelonic

Marko is a PhD student at [Hutter lab](#). His research interest include control and autonomous navigation of legged systems in challenging environments, and the transfer of this technology to robotic and non-robotic applications.



Keep up to date with:

[CYBATHLON](#)



[DRONE DAYS](#)



Cesar Cadena

Cesar is a Senior Researcher at [Hutter lab](#). He works on the robotics perception problem on both, the semantic and the geometry understanding.



SELECTED NCCR ROBOTICS PUBLICATIONS *

G. Agarwal, M. A. Robertson, H. A. Sonar and J. Paik "*Design and Computational Modeling of a Modular, Compliant Robotic Assembly for Human Lumbar Unit and Spinal Cord Assistance*" Scientific reports, vol. 7, p. 14391, 2017.

T. Cieslewski, D. Scaramuzza "*Efficient Decentralized Visual Place Recognition From Full-Image Descriptors*" MRS 2017: the 1st International Symposium on Multi-Robot and Multi-Agent Systems.

F.I.T Dell'Agnola, L. Cammoun, A.D. Atienza "*Physiological Characterization of Need for Assistance in Rescue Missions with Drones*" 2018 IEEE International Conference on Consumer Electronics (ICCE), Nevada, Las Vegas, USA, January 12-14, 2018 Publication date: 2017.

A. Firouzeh and J. Paik "*Soft actuation and sensing towards robot-assisted facial rehabilitation*" IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Vancouver, BC, Canada, 2017.

G. Gallego, Jon E. A. Lund, E. Mueggler, H. Rebecq, T. Delbruck, D. Scaramuzza "*Event-based, 6-DOF Camera Tracking from Photometric Depth Maps*" IEEE Transactions on Pattern Analysis and Machine Intelligence, 2017.

Y. Mengüç, N. Correll, R. Kramer and J. Paik "*Will robots be bodies with brains or brains with bodies?*" in Science Robotics, vol. 2, num. 12, p. eaar4527, 2017.

L. Randazzo, I. Iturrate, S. Perdakis and J. d. R. Millán "*mano: A Wearable Hand Exoskeleton for Activities of Daily Living and Neurorehabilitation*" in IEEE Robotics and Automation Letters, 2017.

H. Rebecq, G. Gallego, E. Mueggler, D. Scaramuzza "*EMVS: Event-Based Multi-View Stereo - 3D Reconstruction with an Event Camera in Real-Time*" International Journal of Computer Vision, 2017.

H.Rebecq, T. Horstschaefer, D. Scaramuzza "*Real-time Visual-Inertial Odometry for Event Cameras using Keyframe-based Nonlinear Optimization*" British Machine Vision Conference (BMVC), London, 2017.

M. A. Robertson, J. Paik, A. Ijspeert and A. Wu "*A low-cost, actuated passive dynamic walker kit for accessible research and education*" Dynamic Walking Conference, Mariehamn, Finland, 2017.

J. Shintake, E. Piskarev, S. Jeong and D. Floreano "*Ultra-stretchable strain sensors using carbon black-filled elastomer composites and comparison of capacitive versus resistive sensors*" accepted in Advanced Materials Technologies, 2017.

Z. Zhakypov & J. Paik, "*Design Methodology for Constructing Multi-Material Origami Robots and Machines*", IEEE Transactions on Robotics, 2017.

*Selected publications include publications which have been made known to the [editor](#). All members are kindly encouraged to inform the management team of new publications.

NCCR Robotics

[The National Centre of Competence in Research](#) (NCCR) Robotics is a Swiss nationwide organisation, funded by the Swiss National Science Foundation (SNSF), pulling together top researchers from all over the country with the objective of developing new, human oriented robotic technology for improving our quality of life. The Centre was opened on 1st December 2010 and binds together experts from four world-class research institutions: Ecole polytechnique fédérale de Lausanne (EPFL)

(leading house), Eidgenössische Technische Hochschule Zürich (ETH Zürich) (co-leading house), Universität Zürich (UZH), Istituto Dalle Molle di Studi sull'Intelligenza Artificiale (IDSIA), for a period of up to 12 years. We are at the forefront of robotics research and develop robots that co-exist symbiotically with humans in order to enable them to help both individuals and society.



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