



Swiss National
Centre of Competence
in Research

COMMUNITY NEWSLETTER

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Public Version



LATEST NCCR NEWS

Mayra Lirot

As already announced at the annual retreat, our Community & Events Officer Mayra Lirot has decided to increase her time with [NCCR SwissMap](#) in Geneva, where she is Communication Officer, and thus leave NCCR Robotics on 1 December. We thank Mayra for her years of service and her contributions, including editing this Infoletter up to the previous issue.



100 women and thousands more

Stéphanie Lacour is featured in this newly-launched campaign, that highlights exceptional career paths of women in Switzerland and France in order to provide role models for young people, and especially young girls. In addition to the website, a book is also available.



New templates and logos

Following the addition of Mirko Kovac as Associate PI, EMPA is now a NCCR Robotics partner organisation and all templates (Word, Letterhead, Power Point and poster) have been updated with the new partner's logo. Please always use the new templates from now on.



30 top women in robotics

Amanda Prorok, currently an Assistant Professor at Cambridge University and a former NCCR Robotics member, is featured in the 2019 list of "30 women in Robotics you need to know" compiled by Robohub. Amanda was with NCCR Robotics in Phase 1, working as a doctoral student in Alcherio Martinolli's lab.



Workshops at IROS 2019

Two successful workshops were organised at IROS 2019, in the Venetian Macau, by NCCR Robotics members. Fabrizio Schiano and Dario Floreano organised the "Aerial Swarms" workshop on 4 November. Davide Scaramuzza organised, with Giuseppe Loianno from NYU, the workshop on "Challenges in Vision-based drone navigation" on 8 November.



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- IROS 2019 workshops
- Congratulations: ERC winners, Associate Professor, Zurich Eye, Women Masters scholarship 2019.
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- NCCR Robotics calls: Cybathlon symposium
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ROBOTICS WORLD

Top News

- Teams complete SubT challenge virtual tunnel circuit
- Robobee powered by soft muscles
- Assembler robot makes large structures from little pieces
- Soft microrobots controlled by nanomagnets
- Harvard's UrchinBot
- Zipline deploys medical delivery drones with US military

World events

- ICRAE 2019 (22-24 Nov)
- ICSR 2019 (26-29 Nov)
- ICAR 2019 (2-6 Dec)
- Robio 2019 (6-8 Dec)
- Techfest (3-5 Jan)

External calls

- DARPA SubT Challenge
- Huawei's Autonomous Vehicle Challenge
- PLOS One call for papers
- Special issue on navigation and control of UAVs

ERC grants winners

Marco Hutter is among the winners of the last round of Starting grants from the European Research Council, with his project "Learning Mobility for Real Legged Robots". Also among the winners is Marco Capogrosso, a former NCCR Robotics member in Micera's and Courtine's lab and spin-fund grantee, and now a professor at the University of Fribourg.



Associate Professor

Guillermo Gallego, formerly a Postdoc in Scaramuzza's lab, has been appointed Associate Professor at TU Berlin. Within NCCR, Guillermo worked on event-based algorithms. His major contributions are the release of the first event-camera dataset for 6-DOF pose estimation and "focus maximization", a method to solve computer vision and machine learning problems with event cameras.



Former Zurich Eye to soon expand

Founded in 2015 by a group of then NCCR Robotics members in Scaramuzza's lab, the Zurich Eye start-up has subsequently become part of Facebook's Oculus Zurich, that will be soon expanding its Zurich office - where it is developing VR technologies - from 80 to 200 employees.



Masters scholarships for women

Kübra Karacan finished her 6-months internship in Gassert's lab at the end of September. She had received the 2019 grant for her project "An Environment Recognition and Parameterization System for Shared Control of a Powered Lower-Limb Exoskeleton".



NCCR ROBOTICS OPEN POSITIONS

PhD Student Positions

The Floreano lab is inviting applications for 2 PhD fellowships, on variable-stiffness drones and collective aerial transportation respectively. The overall goal is to develop multimodal and adaptive flying robots that achieve the agility of birds and can transport objects of diverse size and mass. [Read more](#)



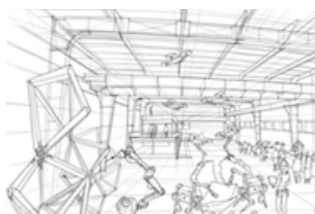
Postdoc Fellowship on Soft Robotic Grippers

The Floreano and Shea labs invite applications for a postdoctoral fellowship on instrumented soft robotic grippers. The goal is the development of a versatile compliant gripper including distributed sensing and localized variable stiffness for intelligent manipulation of deformable objects. Areas of interest include, but are not limited to, stretchable sensors, biosensors, variable stiffness materials, biocompatible... [Read more](#)



Robotics engineer

ETH Zurich is starting a Center for Robotics, which will involve many NCCR Robotics PIs. The new Center is looking for a robotics engineer to support a multidisciplinary team of researchers and educators and serve as the Center's technical point of contact for the robotic platforms. [Read more](#)



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

- Start-up champions@EPFL -co-organized by EPFL and Venturelab, featuring the most successful startups founded by EPFL alumni.
- Ask the entrepreneur - a workshop where you can meet successful entrepreneurs and hear about their experience and recommendations.
- Bench2Biz call for applications - for early technology entrepreneurial ideas from all fields
- INNOSUISSE Start-up training - aimed at entrepreneurs who have already founded their start-up.

Equal Opportunities Corner

- ETH Zurich Gender Monitoring. The 2018/2019 edition of the annual report on the Gender Balance in studies and research at ETH Zurich is online. This year's edition also takes a closer look at women in spin-offs. Other Swiss institutions also publish regular reports on gender balance, including EPFL and the University of Zurich.

External positions

- Postdoc position in Control of Aerial Manipulators (PRISMA lab, University of Naples)
- Robotics for sustainable crop production (various positions, including Group Leaders, Postdoc and PhDs)
- Postdoc position on multi-robot systems (University of Cambridge)
- Tenure Track/Tenured positions (University of Texas)

NCCR Robotics Director

Prof. Dario Floreano

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Cyathlon symposium

The CYBATHLON Symposium 2020 will bring together leading experts to present and discuss recent technological advances within the six disciplines of the CYBATHLON. Deadline for abstracts: 13 December 2019. [Read more](#)



NCCR Robotics Management Team

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2019 EVENT UPDATE - WE WILL BE AT:

NCCR Robotics 2019 Outreach Event: LEARN day "Technologies and robotics for innovation in education"

27 November 2019

BERN

[Read more](#)

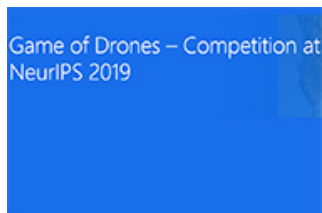


Game of Drones Competition at NeurIPS 2019

08 December 2019

VANCOUVER

[Read more](#)



PRESS COVERAGE

Sensory feedback for bionic legs

Wide media coverage for the publication on clinical trials of a prosthetic leg developed by Micera's and Raspopovic's lab, with NCCR Robotics spin-off SensArs. Articles in The Telegraph, New Scientist, Science News among others.



FlyJacket and Rysen on RTS

The TV programme "La piste de la francophonie", which aired on TV5 Monde on 26 September, included interview to Carine Rognon (Floreano's lab) and Grégoire Courtine (starting from minute 20 in the video). [Read more](#)



Collective Intelligence

Pierre Dillenbourg was interviewed in 24 Heures about the 27th edition of the Forum of the Vaud Economy, whose theme this year was collective intelligence. [Read more](#)



Educational robots

Thymio was featured in an article in RTN about the collaboration between Centre professionnel du Littoral neuchâtelois (CPLN), lycée Jean-Piaget and the Swiss EdTech Collider, focused on educational technologies. [Read more](#)



Foldable drones

The innovative quadcopters developed by Scaramuzza's and Floreano's labs were featured in TechBrief (interview to Davide Falanga) and were the subject of a long article published at the end of October on various German-language Swiss



Courtine's start-up goes to America

24 Heures interviewed Grégoire Courtine about his plans to expand GTX Medical, which he founded as a EPFL spin-offs, across the Atlantic. [Read more](#)



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

NEW VIDEOS

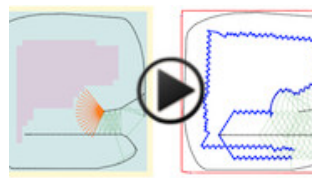
ANYmal C - The next step in robotic industrial inspection



Robot-ants that can jump, communicate and work together



DARPA SubT Challenge: preview of the Exploration without global consistency using local volume consolidation



NEW MEMBERS

Nathan Grenier (Courtine lab)

Nathan is a PhD student working on computational modelling of neuroprosthetics. His PhD thesis aimed at uncovering some of the neural mechanisms involved during epidural electrical stimulation of the cervical spinal cord.



SELECTED NCCR ROBOTICS PUBLICATIONS *

L. Bernreiter, A. Gawel, H. Sommer, J. Nieto, R. Siegwart, C. Cadena Lerma, *Multiple Hypothesis Semantic Mapping for Robust Data Association*, IEEE Robotics and Automation Letters, 2019.

K. Bodie, M. Brunner, M. Pantic, S. Walser, P. Pfändler, U. Angst, R. Siegwart, J. Nieto, *An Omnidirectional Aerial Manipulation Platform for Contact-Based Inspection*, arXiv, 2019.

F. Clemente, G. Valle, M. Controzzi, I. Strauss, F. Iberite, T. Stieglitz, G. Granata, P. Rossini, F. Petrini, S. Micera, C. Cipriani, *Intraneural sensory feedback restores grip force control and motor coordination while using a prosthetic hand*, Journal of Neural Engineering, 2019.

L. El-Hamamsy, W. Johal, T. Asselborn, J. Nasir, P. Dillenbourg, *Learning By Collaborative Teaching : An Engaging Multi-Party CoWriter Activity*, 28th IEEE International Conference on Robot & Human Interactive Communication, 2019.

F. Haufe, A. Kober, K. Schmidt, A. Sancho-Puchades, J. Duarte, P. Wolf, R. Riener,

F. Haufe, P. Wolf, R. Riener, M. Grimmer, *Biomechanical effects of passive hip springs during walking*, Journal of Biomechanics, 2019.

W. Johal, A. Tran, H. Khodr, A. Ozgur, P. Dillenbourg, *TIP: Tangible e-Ink Paper Manipulatives for Classroom Orchestration*, Australian Conference on Human-Computer Interaction, 2019.

W. Johal, O. Robu, A. Dame, S. Magnenat, F. Mondada, *Augmented Robotics for Learners: A Case Study on Optics*, 28th IEEE International Conference on Robot & Human Interactive Communication, 2019.

J. Meyer, O. Schrade, O. Lambercy, R. Gassert, *User-centered Design and Evaluation of Physical Interfaces for an Exoskeleton for Paraplegic Users*, IEEE International Conference on Rehabilitation Robotics, 2019.

L. Paez, K. Melo, R. Thandiackal, A. Ijspeert, *Adaptive Compliant Foot Design for Salamander Robots*, IEEE Conference on Soft Robotics, 2019.

F. Petrini, M. Bumbasirevic, G. Valle, V. Ilic, P. Mijović, P. Čvančara, F. Barberi, N. Katic, D. Bortolotti, D. Andreu, K. Lechler, A. Lesic, S. Mazic, B. Mijović, D. Guiraud, T. Stieglitz, A. Alexandersson, S. Micera, S. Raspopovic, *Sensory feedback restoration in leg amputees improves walking speed, metabolic cost and phantom pain*, Nature Medicine, 2019.

* 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. Read all publications.

NCCR Robotics



The Swiss National Centre of Competence in Robotics (NCCR Robotics) is a federally funded programme bringing together robotics laboratories from EPFL, ETH Zurich, University of Zurich, IDSIA, UNIBE and Empa to work on wearable, rescue and educational robots.



The National Centres of Competence in Research are a research instrument of the Swiss National Science Foundation.

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Images: Bionic leg: Federica Barberi, Hillary Sanctuary/EPFL; Foldable drone: University of Zurich; Robotics engineer position: ETH Zurich; Cybathlon symposium: Cybathlon 2020 website.



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