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robotics ✚ Swiss National Centre of Competence in Research

COMMUNITY NEWSLETTER

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Public Version

📢 LATEST NCCR NEWS

A very successful week at Hannover Messe

This year Hannover Messe welcomed over 215,000 visitors from around the world and around 6,500 exhibitors. Robotics was a major attraction and we were proud to bring together our three spin-offs, Dronistics, FES-ABILITY and Sevensense as well as the Volaly and Yago projects that benfited from great visibiity.

Research Data Management Officer

We welcome Antoine Masson as NCCR Robotics Research Data Management Officer. Antoine is also part of the Research Data Team of the EPFL Library. His main missions are the development of tools and workshop for researchers like the code preservation and publication or the Data life cycle.

Jamie Paik at TED2019

Jamie was a speaker at TED2019 in Vancouver earlier this month. She spoke about the reconfigurable robots developed in her lab which stand to revolutionize the way robots are used. Read more

Women in Research Lunch

NCCR Robotics Alumni (Riener Lab) Heike Vallery (TU Delft, NL), is the guest of our next *Women in research* lunch at ETH Zurich (3rd May). She will also be giving a talk entitled "Robotic Augmentation of Human Locomotor Capabilities" streamed at EPFL. Read more

Fotokite works with firefighters in US

NCCR Robotics spin-off Fotokite's new Tethered Drone System for Firefighters are currently operational and being used in fire departments across the US. Read more

📢 CONGRATULATIONS

SME Phase 1 from Horizon 2020 grant

NCCR Robotics spin-off MyoSwiss was awarded the SME Phase 1 from Horizon 2020 grant.

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· NCCR Robotics calls: Summer School in Rehabilitation Robotics, Engineering PhD Summit
· We will be at...
· Press coverage
· New videos
· New members
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ROBOTICS WORLD

Top News

· Bucharest was the European capital of robotics for #ERF2019
· Robotic arms and temporary motorisation – the next generation of wheelchairs
· Giving robots a better feel for object manipulation
· Robots that can sort recycling
· Robots that learn to use improvised tools

World events

· Atelier Focus Robots (3 May)
· Global Robot Expo (8-9 May)
· 2nd Robotics and ROS in Zurich Meetup (14 May)
· ICRA (20-24 May)
· Deep Learning for Robotics Summit (23-24 May)
· ICCR 2019 (25-27 May)
· ISCAS 2019 (26-29 May)
· MVA (27-31 May)
· ICRAS (1-3 June)
· VLSI (9-14 June)

Best Demo and Honorable Mention for the Best Video Award at HRI 2019

Our member Boris Gromov's (Gambardella lab) Volaly project research on pointing gestures for proximity interaction won best demonstration award and an honorable mention for the best video award at HRI 2019. Read more

Drone Hero Award 2019

The foldable drone, the first quadrotor able to change morphology in flight to adapt its shape and size to different tasks, jointly developed by Scaramuzza's and Floreano's labs, won the Drone Hero Award Contest 2019 for the category Innovative Drone. Read more

📢 NCCR ROBOTICS CALLS

Summer School on Rehabilitation Robotics

The Summer School's (7-13 July) topics include: Therapy Robotics, Assistive Robotics, Virtual Reality, Neuroprosthetics, Neurorehabilitation and Motor Learning. Undergraduate and graduate students expected from Shanghai and Switzerland. Travel and accommodation costs can be reimbursed. Read more

Engineering PhD Summit

The EPFL Intelligent systems Engineering PhD Summit targets final year PhD students from institutions worldwide who will be selected on a competitive basis, to compete for a PhD Summit Prize (travel & accommodation funds available for selected candidates). Workshop dates: 2-4 October. Application deadline: 31st May. Read more

📅 2019 EVENT UPDATE - WE WILL BE AT:

2nd NCCR Robotics Women in Research Lunch

03 May 2019

ETH Zurich / (EPFL Streaming)
Read more

Focus Robots Workshop

03 May 2019

Bern
Read more

Wings for Life World Run (MyoSwiss)

05 May 2019

Zug
Read more

Business ideas @ETHZ: Feel the start-up Groove

07 May 2019

ETH Zurich
Read more

World Conference on Robotics and Artificial Intelligence (10-12 June)

External calls

· Do good robotics symposium (D/L 28 May)
· EXO Berlin 2019
· RO-MAN (D/L May 10)
· SES 2019 (D/L 30 April)
· Summer School on Surgical and Interventional Engineering

Start-up corner

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

· Startup at work - call for four working spaces offered by ERNE (D/L 30 April) (FR)
· Swisscom StartUp Challenge
· Business ideas @ETHZ: Feel the start-up Groove

External positions

· Various positions - Open Robotics
· Assistant/Associate Professor Engineering and Mineral Resources - West Virginia University
· PhD position - Aarhus University
· Two PhD candidates for fully-funded positions - Laval University
· Two PhD positions in agri-food robotics - Wageningen University
· Postdoc position - Computer Vision Group at the Jet Propulsion Laboratory

NCCR Robotics Director

Prof. Dario Floreano

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For Technology Transfer enquiries please contact:
Jan Kerschgens

CVPR 2019 Workshop on Event-based Vision

Second International Workshop on Event-Based Vision

CVPR 2019   Long Beach, CA

17 June 2019

California
Read more

📰 **PRESS COVERAGE**

A.I. Is Flying Drones (Very, Very Slowly)

"Artificial intelligence has bested top players in chess, Go and even StarCraft. But can it fly a drone faster than a pro racer? More than $1 million is on the line to find out." Read more

The New York Times

Some models bring groundbreaking insights to light

"In at least two Nobel Prize-winning discoveries, models have contributed significantly to knowledge. Today, more and more robots come into play, with which complex motion sequences such as flying are examined." Read more

Neue Zürcher Zeitung

More *press coverage* available through NCCR Robotics website.

▶️ **NEW VIDEOS**

Pointing Gestures for Proximity Interaction (Volaly project)

Pointing gestures for quadrotor control (Live demo)

Lorenz training sessions with the MyoSuit

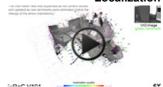**Michael at his training sessions with the MyoSuit**

Are We Ready for Autonomous Drone Racing? The UZH-FPV Drone Racing Dataset

Beyond Point Clouds: Fisher Information Field for Active Visual Localization

Event-based, Direct Camera Tracking from a Photometric 3D Map using Nonlinear Optimization (ICRA'19)

Jan Kerschgens / Ana Caldas | Nicola Nosengo

Web Editing
Mayra Lirot / Ana Caldas

Design
Alternative Communication SA / Pascal Briod

👤 NEW MEMBERS

Gabriele Abbate (Gambardella lab)

Gabriele is currently working at Dalle Molle Institute for Artificial Intelligence (IDSIA). His research focuses on Human Robot Interaction (HRI), with pointing-based interaction interfaces.

Anand Bhaskaran (Floreano lab)

Anand is a Software Engineer. He is architecting and developing software solutions with an extensive focus on reliability, safety, security, and user interaction. He is also involved in the NCCR Robotics spin-off Dronistics.

Robin Demesmaeker (Courtine lab)

Robin is a PhD student EPFL focussing on the optimisation of electrical epidural spinal cord stimulation for people with spinal cord injury. His primary objective is to accelerate the wide-spread clinical translation of this novel therapy.

Matthew Estrada (Ijspeert lab)

Matthew is a postdoctoral researcher his work is exploring anguiliform swimming and sprawling gait locomotion for increased mobility in search and disaster scenarios. He previously has worked on applications for perching and tugging aerial vehicles in similar scenarios.

Olexandr Gudozhnik (Floreano lab)

Olexandr is an HES engineer with background in embedded electronics and applied physics. He is currently working with main focus on unmanned aerial vehicles and other robots. Other professional interests are electric drive vehicles, signal/image processing, control algorithms.

Laila El Hamamsy (Mondada lab)

Laila is a PhD student currently working on the exploitation of robotics to achieve large scale impact in schools. Her research focuses on teacher training, classroom orchestration, and the integration of robotics into the curriculum as a tool to teach children the basics computational thinking.

Dario Mantegazza (Gambardella lab)

Dario is currently pursuing a PhD at the Dalle Molle Institute for Artificial Intelligence (IDSIA). His research is focused on Deep Learning application for autonomous drone flight and point clouds segmentation.

Vincent Mendez (Micera lab)

Vincent is a PhD student at the Swiss Federal Institute of Technology (EPFL) and studying the control of neuro-prostheses. His research focuses on controlling a bidirectional third arm based on biological inputs.

Mirko Nava (Gambardella lab)

Mirko is a PhD student at the Dalle Molle Institute for Artificial Intelligence (IDSIA). His research focuses on Robot Learning approaches that gather data without human supervision and allow robots to adapt to different environments.

Laura Paez (Ijspeert lab)

Laura is a PhD student at EPFL. Her research focuses in studying amphibian locomotion of elongated bodies and their physical interaction with the environment through the use of engineering tools like robots.

Andreas Rowald (Courtine lab)

Andreas is a PhD student at EPFL and studying computational neuroscience in the context of motor function. His research focuses on understanding the neural control of movement and developing computational tools to improve the quality of life in people with neurological disorders.

Charalampos Vourtsis (Floreano lab)

Charalampos Vourtsis is a doctoral student and an EPFL innovators fellow studying aerial robotics. His research is focused on bioinspired resilient aerial platforms for long-range operations.

Lorenz Wellhausen (Hutter lab)

Lorenz is a PhD student studying robot navigation in outdoor environments. His research focuses on legged robot navigation in natural environments, where semantic understanding of the environment is crucial.

Michele Xiloyannis (Riener lab)

Michele is a Postdoc working on the development of soft wearable robots, with the goal of assisting people with muscle weakness in activities of daily life.

👤 DEPARTING MEMBERS

Jeff Delmerico (Scaramuzza lab)

Jeff has joined the Microsoft Mixed Reality and AI Lab in Zürich as a Senior Scientist. His work there focuses on integrating robotic systems into Microsoft's Mixed Reality ecosystem, which includes the HoloLens and spatial cloud services.

Jaime Duarte (Riener lab)

Following his work in the NCCR Robotics, he will continue as CEO of NCCR Robotics spin-off MyoSwiss AG where they are developing technology to help rehabilitate and assist people with mobility impairments.

Ping-Keng Jao (Millán lab)

Ping-Keng Jao will be continuing his PhD degree which he plans to finish before February 2020. For his future he is considering both, a career in the industry and in academia.

📖 **SELECTED NCCR ROBOTICS PUBLICATIONS ***

C. H. Belke, J. Paik, "*Automatic Couplings with Mechanical Overload Protection for Modular Robots*" IEEE/ASME Transactions on Mechatronics, 1-1, 2019.

S. Bryner, G. Gallego, H. Rebecq, D. Scaramuzza, "*Event-based, Direct Camera Tracking from a Photometric 3D Map using Nonlinear Optimization*" IEEE International Conference on Robotics and Automation (ICRA), 2019.

J. Delmerico, T. Cieslewski, H. Rebecq, M. Faessler, D. Scaramuzza, "*Are We Ready for Autonomous Drone Racing? The UZH-FPV Drone Racing Dataset*" IEEE International Conference on Robotics and Automation (ICRA), 2019.

Z. Zhang, D. Scaramuzza, "*Beyond Point Clouds: Fisher Information Field for Active Visual Localization*" IEEE International Conference on Robotics and Automation (ICRA), 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.

NCCR Robotics

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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 and UNIBE to work on wearable, rescue and educational robots.

EPFL   **ETH** *zürich*   USI/SUPSI Istituto Dalle Molle di studi sull'intelligenza artificiale IDSIA u^b UNIVERSITÄT BERN   Universität Zürich UZH

FNSNF SWISS NATIONAL SCIENCE FOUNDATION

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