THE WILLIAM E. BOEING DEPARTMENT OF

AERONAUTICS & ASTRONAUTICS

... welcomes ...

ANGELA SCHOELLIG

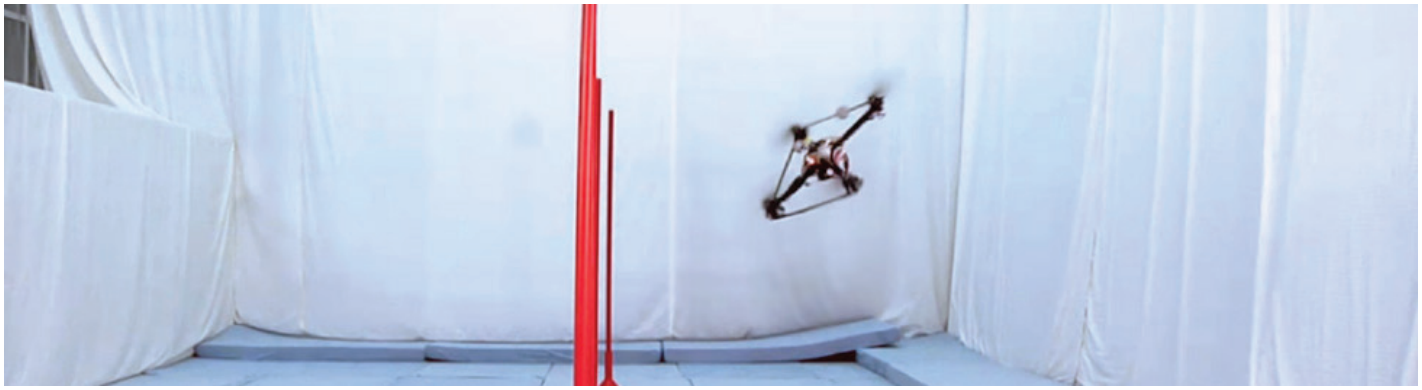
UNIVERSITY OF TORONTO

Machine Learning for Robotics: High-Performance Flight Control in Unknown and Changing Conditions

Traditionally, motion planning and control algorithms for robots have been designed based on a-priori knowledge about the system and its environment (including models of the robot's dynamics and maps of the environment). This approach has enabled successful robot operations in predictable environments. However, to achieve reliable and efficient robot operations in unknown, changing, and generally uncontrolled environments, we must enable robots to acquire knowledge during operation and adapt their behavior accordingly.

In my talk, I will give an overview of my group's research activities on learning-based control for safe, high-performance flight. Our learning schemes combine ideas from control theory and machine learning, and are motivated by real-world applications of flying vehicles. More recently, we have also applied our learning-enabled controllers to self-driving vehicles.

Our list of publications is found here: http://www.dynsyslab.org/research/publications



WILLIAM E. BOEING
DEPARTMENT OF AERONAUTICS & ASTRONAUTICS
UNIVERSITY of WASHINGTON

Monday, April 24, 2017 @ 4:00pm
Johnson Hall. Rm 102 | UW Seattle

Visitor RSVP:
https://goo.gl/forms/W0g9bJiD4bFPLWFi2

THE WILLIAM E. BOEING DEPARTMENT OF
AERONAUTICS & ASTRONAUTICS

... Distinguished Guest Speaker ...

ANGELA SCHOELLIG
UNIVERSITY OF TORONTO

Assistant Professor at the University of Toronto Institute for Aerospace Studies

Associate Director of the Centre for Aerial Robotics Research and Education

Angela Schoellig is an Assistant Professor at the University of Toronto Institute for Aerospace Studies (UTIAS) and an Associate Director of the Centre for Aerial Robotics Research and Education (CARRE). With her team, she conducts research at the interface of robotics, controls and machine learning. Her goal is to enhance the performance, safety and autonomy of robots by enabling them to learn from past experiments and from each other. You can watch her robots, both aerial and ground vehicles, perform slalom races and flight dances at https://www.youtube.com/user/angelaschoe.

She is the recipient of a 2017 Sloan Research Fellowship (as one of two in robotics in the US/Canada), a Ministry of Research, Innovation & Science Early Researcher Award, a Connaught New Researcher Award, and the Best Robotics Paper Award at CRV 2014. She is one of Robohub's "25 women in robotics you need to know about (2013)", winner of MIT's Enabling Society Tech Competition, finalist of Dubai's 2015 $1M "Drones for Good" competition, and youngest member of the 2014 Science Leadership Program, which promotes outstanding scientists in Canada. She has been a keynote speaker at various outreach events including TEDxUofT, Lift China, and the Girls Leadership in Engineering Experience weekend.

Angela received her Ph.D. from ETH Zurich (with Prof. Raffaello D'Andrea), and holds both an M.Sc. in Engineering Science and Mechanics from the Georgia Institute of Technology (Prof. Magnus Egerstedt) and a Masters degree in Engineering Cybernetics from the University of Stuttgart, Germany (Prof. Frank Allgower). Her Ph.D. was awarded the ETH Medal and the 2013 Dimitris N. Chorafas Foundation Award (as one of 35 worldwide).

More on her webpage: http://www.dynsyslab.org/research

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