Yaolei Shen

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Research field: Robot Dynamic and Control

EDUCATION:

09/22-present **University of Twente** **PhD candidate Robotics & Mechatronics** Enschede, The Netherlands
09/19-04/22 **Northwestern Polytechnical University** **Master in Mechanical Engineering** Xi'an, China
09/15-06/19 **Northwestern Polytechnical University** **Bachelor in Mechanical Engineering** Xi'an, China

PROJECTS:

09/22-present **University of Twente (EEMCS faculty)** Enschede, The Netherlands
Aerial manipulation with deformable objects (PhD project)

11/20-03/22 **Northwestern Polytechnical University (School of Mechanical Engineering)** Xi'an, China
Modeling and control for a bird-scale flapping-wing aerial vehicle (Master's Project)

05/16-06/18 **Northwestern Polytechnical University (School of Mechanical Engineering)** Xi'an, China
Design of locust inspired jumping robot (National Innovation Training Program for Undergraduate Students, team leader)

PUBLICATIONS:

Journals:

Y. Shen, A. Franchi and C. Gabellieri. "Aerial Robots Carrying Flexible Cables: Dynamic Shape Optimal Control via Spectral Method Model," *IEEE Transactions on Robotics*, 2025.
Y. Shen, W. Ge, P. Miao. "Multibody-dynamic Modeling and Stability Analysis for a Bird-scale Flapping-wing Aerial Vehicle," *Journal of Intelligent and Robotic Systems*, 2021, **103**(1).
X. Mo, W. Ge, D. Zhao, **Y. Shen**. " Path and function synthesis of multi-bar mechanisms using beetle antennae search algorithm," *Filomat*, 2021, **34**(15), pp. 5215-5233.

Conferences:

Y. Shen, W. Ge, X. Mo et al. "Design of a locust-inspired miniature jumping robot," *2018 IEEE International Conference on Robotics and Biomimetics (ROBIO)*, Kuala Lumpur, Malaysia, 2018, pp. 2322-2327.

Patents:

W. Ge, X. Mo, **Y. Shen** et al. "Seagull inspired flapping-wing mechanism,"CN109693788A (2019).

Preprint:

C. Gabellieri, L. Teeuwen, **Y. Shen**, A. Franchi. Manipulation of Elasto-Flexible Cables with Single or Multiple UAVs. (2025)

SUPERVISON & TEACHING:

03/24-09/24: Teaching assistant for master course "Control of UAV" in University of Twente.
03/23-09/23: Teaching assistant for master course "Control of UAV" in University of Twente.
02/23-06/23: Co-superior for Bachelor thesis "SpinCopter: Modeling and Control" in University of Twente.
02/23-06/23: Co-superior for Bachelor thesis "Load transportation with an elastic cable: modeling and control".
02/20-06/20: TA for bachelor course "Machines and Mechanisms Theory" in Northwestern Polytechnical University.

FUNDING & AWARDS:

2020, First-class academic scholarship of Northwestern Polytechnical University
2019, Excellent Graduation Project for Undergraduates of Northwestern Polytechnical University
2018, Excellent conclusion of National Innovation Training Program for Undergraduate Students of China
2018, First-class academic scholarship of Northwestern Polytechnical University