

# Konstantinos Kanistras

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CONTACT INFORMATION	Department of Mechanical & Aerospace Engineering University of Alabama in Huntsville	301 Sparkman Drive Technology Hall Huntsville, AL 35899 phone: (256) 824-5089 e-mail: konstantinos.kanistras@uah.edu
APPOINTMENTS	<b>University of Alabama in Huntsville</b> <i>Assistant Professor</i> <i>Mechanical &amp; Aerospace Engineering Department</i> <b>Research Interests:</b> Applied Aerodynamics & Flow Control	August 2018 – present
	<b>University of Alabama in Huntsville</b> <i>Lecturer</i> <i>Mechanical &amp; Aerospace Engineering Department</i>	January 2018 – August 2018
	<b>University of Denver</b> , Denver, Colorado <i>Adjunct Professor</i> <i>Electrical &amp; Computer Engineering Department</i>	September 2016 – December 2017
	<b>University of Denver</b> , Denver, Colorado <i>Postdoctoral Fellow</i> , DU Unmanned Systems Research Institute <i>Advisers: Prof. K. P. Valavanis &amp; Associate Prof. M. J. Rutherford</i>	April 2016 – December 2017
	<b>University of Denver</b> , Denver, Colorado <i>Research Assistant</i> , DU Unmanned Systems Research Institute <i>Advisers: Prof. K. P. Valavanis &amp; Associate Prof. M. J. Rutherford</i>	January 2013 – March 2016
	<b>University of Denver</b> , Denver, Colorado <i>Teaching Assistant</i> , Electrical & Computer Engineering Department	September 2011 – December 2012
EDUCATION	<b>University of Denver</b> , Denver, Colorado <i>Ph.D.</i> , Electrical & Computer Engineering	September 2011 – March 2016
	<b>University of Bath</b> , Bath, United Kingdom <i>M.Sc.</i> , Mechanical & Aerospace Engineering	October 2007 – September 2008
	<b>University of Patras</b> , Patras, Greece <i>B.S.</i> , Physics	February 2002 – July 2007
PATENTS	<b>Kanistras, K.</b> , Saka, P. C., Valavanis, K. P., & Rutherford, M. J. (2020). Circulation control system for aerial vehicles. <i>US 10,730,607 B2</i> , 04 August 2020, United States Patent and Trademark Office.	
BOOKS & BOOK CHAPTERS	<b>Kanistras, K.</b> , Valavanis, K. P., & Rutherford, M. J. (2018). Foundations of circulation control based small-scale unmanned aircraft: A comprehensive methodology from concept to design and experimental testing. <i>Springer</i> , ISBN 978-3-319-67851-1.	
	<b>Kanistras, K.</b> , Martins, G., Rutherford, M. J., & Valavanis, K. P. (2014). A survey of unmanned aerial vehicles (uavs) for traffic monitoring. <i>Springer, Book Chapter in Handbook of Unmanned Aerial</i>	

*Vehicles*, 2643-2666.

**Kanistras, K.**, Saka, P. C., Rutherford, M. J., & Valavanis, K. P. (2020). A circulation control system for enhanced aircraft performance. *Springer, Book Chapter in Encyclopedia of Robotics*.

JOURNAL  
PUBLICATIONS

**Kanistras K.**, Saka, P. C., Valavanis, K. P., & Rutherford, M. J. (2018). Wind tunnel investigation of a circulation control wing with dual radius flaps. *Journal of Aircraft, AIAA*, doi.org/10.2514/1.C034208.

Rosen, C., **Kanistras K.**, Saka, P. C., Valavanis, K. P., & Rutherford, M. J. (2018). System identification and controller implementation of a centrifugal compressor for circulation control applications. *Journal of Intelligent and Robotic Systems, Springer*, doi.org/10.1007/5/s/10846-017-0756-6, pp.1-22.

Agha, M., **Kanistras, K.**, Rutherford, M. J., & Valavanis, K. P. (2020). Mathematical model derivation of an unmanned circulation control aerial vehicle *uc<sup>2</sup>av*. *Control Theory and Technology*.

PEER-REVIEWED  
CONFERENCE  
PROCEEDINGS

Vechalapu, T. R., Schweikert, M., Merlock, E., & **Kanistras, K.** (2021). Investigation of the unsteady effects of active blowing using phase-locked piv. *Scitech Conference*.

Rao, S. B., Chatterjee, A., Landrum, D. B., & **Kanistras, K.** (2021). Enabling civilian applications of unmanned teams through collaboration, cooperation and sensing. *Scitech Conference*.

Chatterjee, A., Vechalapu, T. R., & **Kanistras, K.** (Under Review). Experimental investigation of the wingtip vortex structure of planar elliptical and crescent shaped wing planforms. *AIAA Aviation Conference 2021*.

Michailidis, M. G., **Kanistras, K.**, Agha, M., Rutherford, M. J., & P., V. K. (2018). Nonlinear control of fixed-wing uavs with time-varying aerodynamic uncertainties via  $\mu$ -synthesis. *Decision and Control Conference*.

Michailidis, M. G., **Kanistras, K.**, Agha, M., Rutherford, M. J., & Valavanis, K. V. (2017). Robust nonlinear control of the longitudinal flight dynamics of a circulation control fixed wing uav. *56th IEEE conference on Decision and Control, December 12-15, Melbourne Australia*.

Michailidis, M. G., Agha, M. t., Rutherford, M. J., & Valavanis, K. P. (2017). A controller design framework for a nextgen circulation control based uav. *IEEE CCTA Conference, Hawaii*.

Agha, M., **Kanistras, K.**, Saka, P. C., Valavanis, K. P., & Rutherford, M. J. (2017). System identification of circulation control uav using x-plane flight simulation software and flight data. *AIAA Aviation, Denver (Co), 5-9 June*.

Rosen, C., **Kanistras, K.**, Saka, P. C., Valavanis, K. P., & Rutherford, M. J. (2017). Design and development of a control scheme for uc2av: Unmanned circulation control aerial vehicle. *AIAA SciTech, Grapevine, Texas, 9-13 January*.

**Kanistras, K.**, Saka, P. C., Valavanis, K. P., & Rutherford, M. J. (2016). *uc<sup>2</sup>av*: Unmanned circulation control aerial vehicle for short takeoff and enhanced payload. *AIAA Aviation, Washington (DC), 13-17 June*.

Saka, P. C., **Kanistras, K.**, Valavanis, K. P., & Rutherford, M. J. (2016). Development of a framework for a circulation control-based unmanned aerial vehicle. *IEEE Aerospace Conference, Montana, USA*.

**Kanistras, K.**, Saka, P. C., Valavanis, K. P., Vitzilaios, N., & Rutherford, M. J. (2015b). Low speed wind tunnel investigation of a circulation control wing for enhanced lift. *AIAA Aviation Dallas, Texas, 22-26 June*.

**Kanistras, K.**, Saka, P. C., Valavanis, K. P., Vitzilaios, N. I., & Rutherford, M. J. (2015a). Design and development of an air supply unit for circulation control wing-based uavs. *IEEE Aerospace Conference, Montana, USA*.

**Kanistras, K.**, Rutherford, M. J., Vitzilaios, N., & Valavanis, K. P. (2014). Experimental study of circulation control wings at low reynolds numbers. *32nd Applied Aerodynamics Conference, Aviation, Atlanta*.

**Kanistras, K.**, Rutherford, M. J., & Valavanis, K. P. (2014). Development of a circulation control wing for uavs. *IEEE Aerospace Conference, Montana, USA*.

**Kanistras, K.**, Martins, G., Rutherford, M. J., & Valavanis, K. P. (2013). A survey of unmanned aerial vehicles (uavs) for traffic monitoring. *International Conference on Unmanned Aircraft Systems (ICUAS), Atlanta, 221-234*.

Brune, C., Dityam, T., Girwar-Nath, J., **Kanistras, K.**, Martins, G., Moses, A., ... Valavanis, K. P. (2012). Enabling civilian applications of unmanned teams through collaboration, cooperation and sensing. *SPIE Defense, Security and Sensing*.

WORKSHOPS **Kanistras, K.**, & Valavanis, K. P., *Circulation Control and active flow techniques on UAVs for enhanced performance* Tutorial in ICUAS 13-16 June 2017 Conference, Miami, USA.

Alvarenga, J., and **Kanistras, K.**, and Vitzilaios, N. I., Rutherford, M. J., & Valavanis K. P., *Unmanned Aircraft Systems Technology Overview Short Course*, University of Denver Unmanned Systems Research Institute, Front Range Airport, CO, USA. September 5, 2013.

CLASSES TAUGHT

- MAE 480/580 Aircraft Stability & Control
- MAE 331 Aerodynamics Labs
- MAE 343 Compressible Aerodynamics
- MAE 310 Fluid Mechanics
- ENMT 4010 Space Systems Design
- ENMT 3220/422- Mechatronics I & II
- ENGR 3721 Contrtols
- ENGR 3611 Engineering Analysis
- ENGR 3621 Advanced Engineering Mathematics

AWARDS

- Graduate Student Scholar of the Year (University of Denver, USA), 2015
- Graduate Studies Dissertation Fellowship (University of Denver, USA), 2014-2015
- Graduate Studies Doctoral Fellowship for Inclusive Engagement (University of Denver, USA) 2012-2013
- A. Mentzelopoulos Scholarship (University of Patras, Greece), 2011-2013
- Young Scientist Award: International Sustainable Aviation & Energy Research Society, 2020

EDITORIAL DUTY

- Reviewer: **Journal of Intelligent & Robotic Systems**, Springer, 2013 – present
- Reviewer: **Journal of Aircraft**, AIAA, 2017 – present
- Reviewer: **International Conference on Robotics and Automation**, 2017 – present
- Reviewer: **Association for Unmanned Vehicle Systems International**, 2018 – present

UNIVERSITY SERVICES & MEMBERSHIPS

- **Mechanical & Aerospace Department**, Member of the Undergraduate Aerospace Committee 2019 – present

- **AIAA**, Applied Aerodynamics Technical Committee Member 2020 – present

PROFESSIONAL MEMBERSHIP

- The American Institute of Aeronautics and Astronautics - Senior Member 2012 – present