

Electrical & Computer Engineering Seminar

Michael C.F. Bazzocchi, Ph.D., P.Eng.

Assistant Professor in Mechanical and Aerospace Engineering

Clarkson University

Will present a talk entitled:

**Astronautics & Robotics: Future Directions in Space Exploration
and Assistive Robotics**

Wednesday, April 12th, 2023

Wednesday 4pm

CAMP 176

Also via zoom: <https://clarkson.zoom.us/j/97883816982?pwd=SkFaQlUraW40QVByM2orS05FRU9RQT09>

Abstract: With the advent of private space companies and deep space missions, innovation is once again necessary to provide the foundations and resources required for the next era of space exploration. My research focuses on novel theories, practices and technologies that solve complex challenges in the areas of astronautics, robotics, and society. In particular, my work focuses on asteroid science and engineering, spacecraft dynamics and control, and robotics. Additionally, my research naturally extends to the areas of spacecraft formations, miniaturized satellites, space debris removal, mission and systems design, as well as terrestrial and assistive robotics. In this seminar, challenges in emergent fields of astronautics and robotics, such as asteroid mining, space-based solar power, space manufacturing, and assistive robotics, will be discussed. These imminently developing fields present tremendous research opportunities to transform deep space exploration, the space industry, and life on Earth.

Short Bio. Dr. Michael C.F. Bazzocchi is an Assistant Professor at Clarkson University and Director of the Astronautics and Robotics Laboratory (ASTRO Lab). Previously, Dr. Bazzocchi held positions at the University of Toronto (Canada) in Mechanical &

Industrial Engineering, the Institute for Robotics and Mechatronics, the Toronto Institute of Advanced Manufacturing, and the Institute for Aerospace Studies. He was a researcher in Onboard Space Systems at Luleå University of Technology (Sweden). Dr. Bazzocchi also worked for the RHEA Group as a spacecraft concurrent design engineer on the Canadian Space Agency satCODE (satellite concurrent design) project. Dr. Bazzocchi's research interests can be broadly categorized into the fields of astronautics and robotics. Within the realm of astronautics, Dr. Bazzocchi has expertise in the areas of asteroid science and engineering, orbital dynamics and control, mission and systems design, as well as satellites, spacecraft formations, and space debris. He has research interests within several application areas of robotics, including space, terrestrial, industrial, and personal and assistive robotics. Dr. Bazzocchi is also exploring applications of artificial intelligence and machine learning to develop innovative solutions to research challenges in these areas.

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