FORDHAM UNIVERSITY
THE JESUIT UNIVERSITY OF NEW YORK

Department of Computer and Information Science

Fall 2017 CIS Faculty Research Talk Series

Research in Computational Robotics

Speaker: Damian M. Lyons, Graduate Program Director Fordham University

Date: November 1, 2017

Time: 12:00 pm – 1:00 pm

Venue: John Mulcahy Hall (JMH) 342

Abstract: Robotics is a multidisciplinary field, including components of Mechanical and Electrical Engineering as well as Computer Science and Artificial Intelligence. It is an extremely demanding field in that it requires algorithm and software design to handle error-prone sensor readings, in real-time, and produce effective actions of the robot despite a potentially unstructured operating environment.

In this talk I will review two recent robotics research projects conducted in the Robotics and Computer Vision lab. The first concerns navigation – one of the most fundamental skills necessary for most autonomous robots – and shows the rich interplay between robotics and fields such as Ethology (the study of animal behavior). The second concerns analysis of robot programs – using techniques pioneered in computer science – to attempt to establish performance guarantees for autonomous robots. The second topic has come under increasing scrutiny as autonomous robots – such as self- driving trucks and cars – are on the cusp of entering society in a major way.

Speaker's Biography: Dr. Damian M. Lyons is a Professor of Computer Science at Fordham University and the Director of Fordham's Robotics and Computer Vision Laboratory. Dr. Lyons has undergraduate degrees in Math (B.A., 1980) and Electrical Engineering (B.A.I., 1980) and a master's degree in Computer Science (M.Sc., 1981) from Trinity College, University of Dublin, Ireland. He earned his doctorate in Computer Science from the University of Massachusetts at Amherst (Ph.D., 1986). Dr. Lyons' research interests are in Robotics and Artificial Intelligence. His interests include formal approaches to plan and program representation and analysis, hybrid deliberative-reactive systems, target tracking, camera handoff, multisensory fusion and behavior recognition. Along with colleagues at Georgia Institute of Technology, he has developed a unique approach to the formal verification of the behavior of autonomous robots - predicting how such systems can behave. His background includes over 15 years as a researcher and research program manager at the US division of Philips corporate research laboratories, where he was Department head for the Video and Display Processing research department. He was responsible for technical leadership and funding for this diverse group, and project leader for Philips' research activities in Automated Video Surveillance. He joined Fordham in 2002, and since then has worked as chair of the Department of Computer and Information Science (2006-2011) and later as Fordham's interim Chief Research Office and Associate VP (2016). He has sat on numerous program committees, has published over 80 technical papers in conferences, journals and books, and is inventor/co-inventor of 13 US patents. Dr. Lyons is a senior member of the IEEE.

Refreshments will be served!

For more information about this Fall 2017 CIS Faculty Research Talk Series, please contact Habib M. Ammari at hammari@fordham.edu