SICSA Distinguished Visiting Fellow - Rogelio E. Cardona-Rivera

Hosts: Ron Petrick, Mary Ellen Foster

Edinburgh, 29 July - 16 August 2019

Dr Rogelio E. Cardona-Rivera visited Heriot-Watt University (Edinburgh Campus) and the University of Glasgow from 29 July - 16 August 2019, generously sponsored by SICSA. The main goal of the visit was to establish a collaborative research agenda with the hosts, Drs Ron Petrick and Mary Ellen Foster, related to Dr Cardona-Rivera's expertise around computational models of narrative and game design. During the stay, Dr Cardona-Rivera primarily found common ground with Dr Petrick, identifying a set of topics for potential research collaboration: (a) using epistemic planning models in interactive narrative virtual environments, (b) planning-based models of deception and deception-recognition, (c) preliminary steps toward a science of execution of automated plans that can reconcile common problems between different task environments (specifically, digital games and robotics), and (d) combining models of automated plan recognition and planning for flexible agent assistance. Drs Petrick and Cardona-Rivera identified several opportunities to establish international collaboration via United States Department of Defense International Branches, specifically the US Air Force Office of Scientific Research and the Office of Naval Research. Dr Petrick will also visit Dr Cardona-Rivera in Salt Lake City, Utah, US in 2020 to continue to develop the above ideas into a cohesive research narrative.

Dr Cardona-Rivera gave two talks during his visit to Scotland, both on the topic of Modeling Narrative Intelligence to Support Adaptive Virtual Environments, presenting his research on developing computational models of interactive narrative that (a) allow an automated system to algorithmically generate an interactive virtual environment and manage the interaction of its users to achieve targeted experiential goals and (b) model the cognitive sensemaking of its users to provide theoretical guarantees of how they will comprehend said virtual environments. The first talk was held on 8 August, at the University of Glasgow. The second talk was held on 16 August, at Heriot-Watt University. Both talks led to interesting discussions with participants and new pointers for related research. Further, Dr Cardona-Rivera positively engaged with several faculty at SICSA institutions; at the University of Edinburgh, Dr Mark Steedman (Informatics) and Dr Hannah Rohde (Linguistics), and at Strathclyde University, Dr Michael Cashmore (Computer Science).

In summary, Dr Cardona-Rivera's visit was very fruitful for both the visitor and the hosts. While Dr Cardona-Rivera's research primarily targets impacting human interaction with computational artifacts, there is a strong overlap with Dr Petrick's research on automated planning-based models of social phenomena. Furthering and formalizing the technical research collaboration between the two is bound to be advantageous for both, and could create interesting synergies for research in automated planning, plan recognition, and interactive virtual environments.