Leadership in Action – Exploring the Use of AI and Robotics in Environmental Research at the University of Florida

Rowena Shivam

BSc Sustainable Built Environment, Energy and Resources

ICONIC 2026

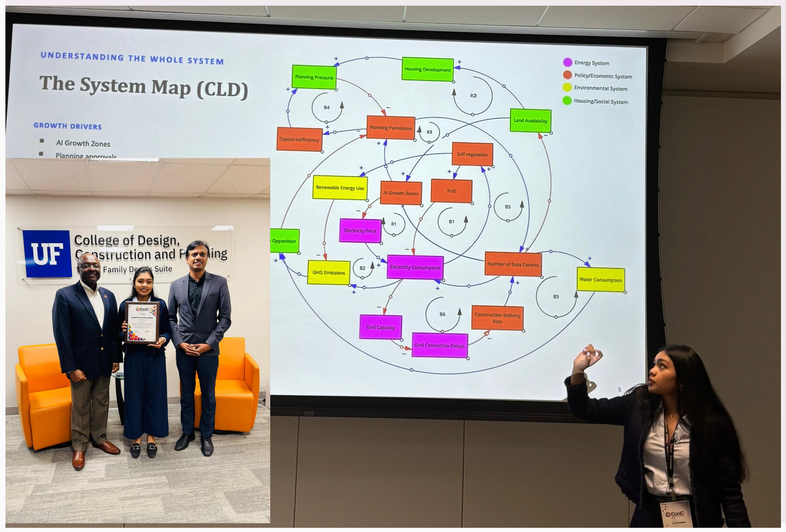
During my first two weeks I attended the International Conference on Industrialised Construction. I presented my research on the environmental impacts of data centre construction in the UK and was awarded the runner-up prize. I also had the opportunity to attend several other presentations during the conference. I learnt a lot about the applications of robotics in the construction sector and attended an interesting discussion about smart university campuses. I also attended the opening of UF's newest robotics lab, hearing firsthand the importance that the university and Florida as a state places on technology education from the attending Senator. The conference experience has inspired me to learn more about robotic construction techniques in my final year studying the sustainable built environment at UCL.

GO GATORS!

During my LiA I had the pleasure of spending time with a visiting group of senior academics from UPI university Indonesia, observing the process of international higher education partnership-building. I also had the great joy of presenting in the same conference session as Dr Paramita, learning so much from her pioneering work building cool roofs. We look forward to collaborating in the future. We are all pictured together below visiting UF's data centre:

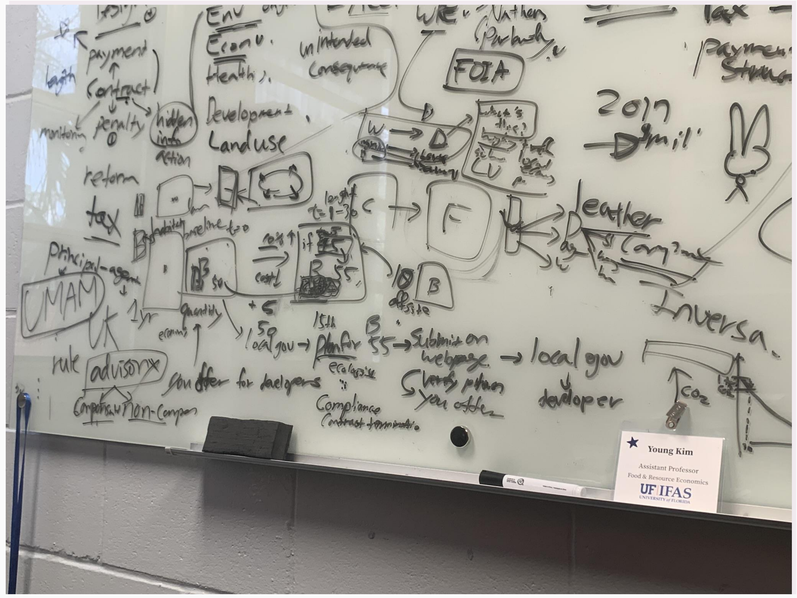
Academic Discussions – how do we balance the progress AI helps us make in biodiversity conservation with its detrimental environmental impacts?

I was first asked this question at the 2025 Laidlaw Conference in Durham when presenting about my research and AI-enabled startup for Biodiversity Net Gain (BNG). I was keen to find out what UF academics thought. The ecologists I spoke to train many different AI models to process the vast number of images they collect from drones and satellites when observing wading bird nesting or tree canopy cover. One of the ecologists I spoke with felt that they should start calculating the carbon cost of such work which would then enable them to ask 'is a 1% model improvement really worth x amount of carbon?'. I feel encouraged now to continue ethically leading international discussions on this debate. I also had a chance to speak with an economist at UF and discovered that Florida has a similar policy to BNG called UMAM which I look forward to researching in more depth in the future.



UF HyperGator Tour

The HyperGator is UF's own on-site data centre. It was an incredible opportunity to go from speaking about data centres to being inside one. I learnt that the centre is LEED certified which is the US equivalent of the UK's BREEAM certification assessing the environmental performance of a building. This is a notable step towards reducing the detrimental environmental impacts of AI. In my research I have used a systems thinking approach to explore how data centres can be better constructed and integrated with local policies to reduce environmental damage; seeing elements of this in person was a privilege. I developed a greater appreciation for how much work goes into building, maintaining and operating an onsite data centre as well as the many benefits this has for students and staff across the university, supporting much of the biodiversity research I would come to learn about from UF academics in the following month.



Rowena.Shivam.24@ucl.ac.uk

rowenashivam@gmail.com

www.bngsmart.com

This project was made possible by Dr Ravi Srinivasan

Vice Dean – College of Design, Construction and Planning