SMC eNewsletter's Student Corner Column (September 2025 Issue)

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In this issue of the Student Corner Column, we interview Giannis Petousakis, a Ph.D. student in the Department of Computer Science, at the Cognitive Robotics Lab at the University of Manchester, in the United Kingdom. Giannis (Ioannis) Petousakis has been working in research for the better part of the last 7 years. Since before graduating as an Automations Engineer from the University of West Attica (2021), he had participated in and conducted research, initially as part of the Extreme Robotics Lab of the University of Birmingham, where he has also worked as a researcher. He has published work on Human-Robot Interaction and Teaming. He is currently working on his Ph.D in Computer Science at the University of Manchester, as part of the Cognitive Robotics Lab. His research focuses on providing the AI with the ability to better understand and interact with humans.

1. Please tell us about your academic journey and how you arrived at your current research topic?

My name is Giannis (Ioannis) Petousakis, and I have been passionate about Robotics and Artificial Intelligence since my undergraduate years. My academic journey began to take shape in 2018, when I joined the Extreme Robotics Lab (ERL) at the University of Birmingham for an Erasmus internship. There, I worked on Human–Robot Interaction for nine months, which led to my first publication on using the state of human operators to inform the behaviour of AI agents, with the goal of improving the interaction between the two partners. In 2020, while working on my thesis, I returned to the University of Birmingham and, after graduating, continued at the ERL as a researcher. Over the following two years, I explored various research topics, focusing particularly on Human–Robot Interaction and Teaming. My work centered on leveraging information about the human partner s state and intent to shape more adaptive and nuanced robot policies. Through this experience, I was able to crystallize my long-term research vision, which led me to pursue a Ph.D. position. I am now a doctoral researcher at the Cognitive Robotics Lab at the University of Manchester. My current research focuses on developing and evaluating a framework that enables AI agents to integrate information about a human partner s state, actions, intent, and performance, and use this to augment their decision-making and collaboration policies.

2. What inspired you to pursue research in your chosen field? How do you see it impacting society and humanity?

From the very beginning of my academic journey, I was fascinated by the interaction between humans and robots. My main interest has been to explore how we can emulate the way humans collaborate and communicate with one another, often relying on nonverbal communication and shared understanding of the world and their partners. My goal has been to replicate this process, enabling AI systems to interpret human behaviour in a more nuanced manner. In my current research, I have adopted a more interdisciplinary perspective, integrating insights from psychology. In particular, I draw on principles from Theory of Mind to process nonverbal cues related to the operator s state, actions, intent, and performance. This approach allows us to build richer models of the human partner s abilities and limitations, and to assess their capacity to successfully carry out a given task. Looking ahead, I see this line of research as having a broad societal impact. By improving the robot's and AI system's ability to understand non-verbal communication, we can promote more nuanced collaboration and advance applications in areas such as smart vehicles, healthcare, assistive robotics, manufacturing, and everyday service environments. Ultimately, this can contribute to creating technologies that not only support humans in complex tasks but also foster trust, safety, and seamless collaboration between people and intelligent machines.

3. What motivated you to join the IEEE and the SMC Society?

I have been an IEEE member since my undergraduate years at the University of West Attica. My primary motivation was the opportunity to connect and collaborate with people who shared similar interests, both within my university and through the wider opportunities offered by IEEE. What particularly drew me to the SMC Society was its interdisciplinary focus and its emphasis on Human–Machine Systems, which closely aligns with my own research interests. The society's broad perspective provides an excellent platform for exchanging ideas across disciplines and fostering collaborations that advance the field.

4. How has being a member impacted your academic or professional journey?

Being an IEEE member has given me access to valuable learning resources, workshops, and conferences, where I have been able to exchange ideas with researchers from diverse backgrounds. The SMC Society, in particular, has exposed me to interdisciplinary perspectives and provided opportunities to present my work and receive constructive feedback. Overall, the most important benefit has been the combination of academic growth and professional networking that these communities foster.

5. Where do you see yourself in the next 5-10 years?

In the next 5 to 10 years, I see myself continuing to work in research, either in academia or in an industrial setting, ideally in a role that bridges both. I am particularly motivated by research that has practical applications and can be translated into real-world scenarios. As my work evolves, I aim to deepen its interdisciplinary nature, especially by integrating more concepts from psychology into AI systems to strengthen human–AI collaboration. Beyond research, I am also interested in contributing to AI policy-making, as I believe it is becoming increasingly important to guide the ethical and responsible development of AI technologies in step with rapid advancements.

6. What advice would you give to other students considering joining IEEE or a specific society like SMC?

My main advice to students who are considering joining IEEE or one of its societies is to take an active role and participate in as many activities and initiatives as possible. These opportunities allow you not only to develop and refine your skills but also to build invaluable professional networks. Engaging with a society like SMC exposes young researchers to a wide range of perspectives, disciplines, and constructive feedback, which can be instrumental in shaping both their academic and professional growth.