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

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In this issue of the Student Corner Column, we interview Pedro Rici from Federal University of Rio Grande do Norte, Brazil.

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

I started my degree in 2016 in an interdisciplinary Science and Technology course, which allowed me to later choose between different Engineering disciplines. So from an early stage I was torn between pursuing Electrical Engineering or Computer Engineering. In the end, I chose Electrical Engineering, but always looking for intersections with Computer Engineering. So, in 2020, with the start of the pandemic, I began studying the application of Deep Learning techniques to detect Covid-19 in lung X-rays, which confirmed my interest in bringing technology together for the benefit of humanity. The project sparked my interest in carrying out research and at that moment I had confirmation that this was what I wanted to do, research and education. At the end of my second degree, in 2023, I was sure that I would like to continue in the field by doing a Master's degree at Universidade Federal do Rio Grande do Norte. So in 2024, I started my research, still in the Machine Learning area, but this time not related to Healthcare, but to optimizing resources in High Performance Computing. The topic gave me the chance to combine Electrical Engineering and Computer Engineering, allowing me to apply Machine Learning techniques to reduce energy expenditure in supercomputer applications.

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

Nowadays, there isn't a single area in our society that doesn't have the influence and use of computing, and this will become increasingly present and frequent, given the enormous benefits it brings. However, this also means the need for greater computing power and consequently even greater energy expenditure. There is already research that shows that energy consumption for computing will increase more and more in the coming years and that there will be an ever more constant need to optimize resources. So for me, as an Electrical Engineer who is enthusiastic about Computing and Machine Learning techniques, using these tools to reduce the impact on our planet and our society is an obvious choice and one that motivates me to continue in this area.

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

I got to know IEEE in 2019, at the end of my first undergraduate degree, and promptly became interested in participating in the extension and teaching activities offered by my Student Branch at Universidade Federal do Recôncavo da Bahia. Because I live and study in a city in the interior of Brazil, with just over 50,000 inhabitants in a region far from the main technology centers, our community lacked government support and our Institution lacked incentives in areas such as artificial intelligence and cybernetics. IEEE emerged as a bridge for us to achieve both goals, helping our local

community while at the same time being able to develop in areas that are lacking at our University. So in 2019, I was part of the founding of the first Student Branch Chapter of the SMC Society in Brazil, becoming the first Chair of the organizational unit. Since then I have continued to volunteer for IEEE and SMC, participating in activities, events, projects and holding volunteer positions in my Section and Region.

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

I always tell my friends, colleagues and anyone who asks me that there was a Pedro before IEEE and a Pedro after. Thanks to my dedication within the Institute, I was able to develop skills that are now essential in my academic and professional life, such as people and resource management, public speaking, leadership and, of course, networking. Joining the IEEE as a Student Member opened many doors that seemed so distant before and made it possible for me to fulfill dreams, such as traveling to other countries and meeting people from all over the world. In addition to all the soft skills, IEEE has introduced me to incredible topics and professionals, where I have been able to present on the latest in technical areas of my interest, whether through summer schools, magazines or workshops that I have been able to attend and learn from. Finally, an impact that can't be measured, but which has shaped me as a human being, has been the people I've met on this journey, which in 2025 will be 7 years old. I have friends who I met thanks to IEEE and who are still part of my life today, even though they live hundreds of kilometers away, speak other languages and live in other cultures. Feeling part of a community and being embraced by it is one of the things that keeps me going at IEEE and motivates us every day to always strive for excellence.

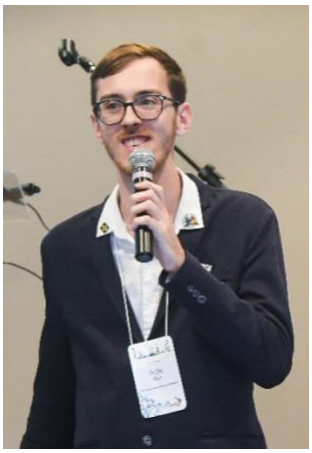
5. Where do you see yourself in the next 5-10 years?

I'm currently halfway through my Master's in Computer Engineering and in five years' time I hope to be finishing my PhD. In 10 years' time I hope to be doing what I love most, which is teaching. I hope to be transmitting knowledge and values that I consider essential to building a fairer and more equal society, using our technical knowledge in actions that really help the local community. Obviously, I will still be an IEEE member, preferably a Senior Member, acting as an Advisor in some Student Branch Chapter and volunteering in actions in my Section and Region.

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

Go for it. Take advantage of all the opportunities that arise, whether technical, humanitarian, educational or social. Make friends, travel, research, organize events. But above all, have fun. We are volunteers, we don't get paid in money to do what we do, we get paid in words, gestures and feelings. Find what makes sense for your personal and professional life and take advantage of all the benefits that IEEE and SMC have to offer you, regardless of where you live or what language you speak, you can make your dreams come true and IEEE can be a great ally for that.

Biography:



Pedro Rici graduated in Exact and Technological Sciences (2019) and Electrical Engineering (2023), both from the Federal University of Recôncavo da Bahia (UFRB). He has worked as an academic monitor, student representative, and intern at the UFRB's Infrastructure and Environment Coordination. He has played an active role in extension projects, serving as Chair of the IEEE UFRB Student Branch and the IEEE SMC UFRB Student Chapter in 2021, and current Section Student Activities Chair of the IEEE Northeast Brazil Section. He has experience in work involving Deep Learning, having presented and published the article "Analysis of the selection of Data Augmentation hyperparameters in the detection of Covid-19 in x-ray images with Deep Learning" at the XV Brazilian Congress of Computational Intelligence. He undertook an academic exchange to the Polytechnic Institute of Bragança in Portugal between 2022 and 2023, where he was a researcher linked to CeDRi IPB, working on the PandIA project. He is currently studying for a Master's degree in Computer Engineering at the Federal University of Rio Grande do Norte.