

SCMR 2026 in Brazil: Developing generalist AI methods for cardiovascular magnetic resonance and strengthening regional collaboration in Latin America

IET Travel Award Report

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Oxford CMR group photo at the SCMR 2026 closing ceremony in Rio de Janeiro, Brazil.

I am Ricardo A. Gonzales, a postdoctoral research fellow at Harvard Medical School working on AI in medical imaging. I attended the Society for Cardiovascular Magnetic Resonance (SCMR) Annual Scientific Sessions in Rio de Janeiro, Brazil, with support from an IET Travel Award. I am grateful to the IET and the Postgraduate and Travel Awards Panel for enabling my participation at an international forum focused on advancing cardiovascular magnetic resonance (CMR) research and clinical practice. The meeting was professionally valuable because it combined scientific exchange with relationship-building. It was also personally meaningful to take part in a major CMR meeting hosted in Latin America, my hometown region, and to see strong regional participation.

Across the week, the discussions that stayed with me most were those centred on how to deliver reliable CMR in real-world settings that vary widely in resources, infrastructure, and workflow constraints. A recurring emphasis was that progress is not only about new methods, but also about standardisation, practical implementation, and building systems that can be taught, audited, and sustained. There was consistent attention to multidisciplinary collaboration and shared governance of protocols and reporting. Another theme was the value of regional infrastructure such as registries, structured reporting, and multicentre coordination that can turn local experience into generalisable evidence. Interoperability and integration challenges also came up repeatedly, highlighting that adoption depends on tools fitting into clinical ecosystems, not just performing well in isolation.



Title and acknowledgements slides from my SCMR 2026 oral presentation on generalist AI for cross-modality landmark annotation in CMR.

My main contribution to the meeting was an oral presentation titled “Generalist deep learning for cross-modality landmark annotation in cardiovascular magnetic resonance” [1]. In CMR, many standard analyses depend on reliable landmark placement, such as identifying the left ventricular centre and the right ventricular insertion points that underpin consistent segmentation and reporting. This task is time-consuming when done manually, and it becomes even more demanding when a single clinical scan includes multiple sequences whose appearance can differ substantially, for example T1 mapping and late gadolinium enhancement. In my talk, I presented the case for training a single generalist model across modalities so that it learns stable anatomical cues rather than modality-specific appearance, which is often the source of brittleness. I emphasised three practical messages: specialist models can look strong within their own domain yet fail when the modality changes, generalist training can remove much of that failure mode, and variety in training data is a major driver of robustness, with data volume refining accuracy once variety is present.

A key outcome of the trip was the progress made in discussions with Latin American CMR colleagues about practical next steps for regional collaboration. The conversations focused on concrete priorities, including efficient scan protocols for routine clinical use, workflow organisation for higher-volume services, and shared standards to improve consistency in reporting and training. There was also clear interest in building a structure that continues beyond a

single annual meeting, with regular coordination and sustained participation in future SCMR conferences. Specific ideas included creating a map of CMR centres in the region to document current capabilities, identify training opportunities, and support future multicentre projects.

On a personal and professional level, the trip also provided a timely moment of reconnection and alignment with collaborators across my different training stages. It was genuinely great to meet my Oxford DPhil team again after some time, and to reconnect in person with many colleagues. In that context, it was a special moment to see my DPhil co-supervisor, Professor Vanessa Ferreira, stepping into the SCMR presidency during the meeting week. I also had productive conversations that advanced collaborative writing and future joint work, including planning around a state-of-the-art review project and discussions with colleagues from my previous group at Yale about new directions we can pursue together.

Beyond the scientific programme, being in Rio added a cultural dimension that made the week memorable and helped place the meeting in a broader regional context. This was my second time in Brazil, and I again appreciated the energy of the city and the sense of community that comes from sharing experiences outside the conference venue, particularly during a period of vibrant local festivities. I was also pleasantly surprised by the visibility of startups and entrepreneurial activity, which offered another perspective on how innovation ecosystems develop alongside academic and clinical work.

Overall, the IET Travel Award enabled me to participate in SCMR 2026 in a way that combined scientific contribution, regional engagement, and forward-looking collaboration, including an oral presentation on generalist methods for cross-modality landmark annotation in CMR and continued momentum toward a more coordinated Latin American CMR initiative. I am sincerely thankful to the IET for making this experience possible, and I hope the outcomes described here reflect both the immediate value and the longer-term impact supported by the award.

References

1. Gonzales RA, Suárez Gurruchaga CR, Manrique AL, Atkinson D, Ferreira VM, Zhang Q, and Piechnik SK. Generalist deep learning for cross-modality landmark annotation in cardiovascular magnetic resonance. *Journal of Cardiovascular Magnetic Resonance* 2026; 28. DOI: 10.1016/j.jocmr.2025.102264