

VantTec is a collegiate engineering team from Tecnológico de Monterrey, committed to using technology as a tool for education, empowerment, and social impact. Through sustained outreach initiatives, our team works to bring science and engineering closer to communities with limited access to STEM education, fostering curiosity, confidence, and long-term interest in technology. One of our primary outreach efforts is SMALC – Sin Miedo a la Corriente. In collaboration with the Student Society of Robotics and Digital Systems Engineering at Tecnológico de Monterrey, VantTec participates in multiple editions of SMALC, a social service program that provides advanced robotics and technology workshops to children from public schools. These sessions are designed not only to teach technical concepts, but also to expand students' understanding of what engineering and robotics can be.

Through SMALC, we bring into the classroom the same principles and tools we use as a collegiate engineering team. Students are introduced to computer vision concepts, including how computers process images using OpenCV, how object-detection models such as YOLO work in real time, and how MediaPipe identifies hands, faces, and human poses. The children do not simply observe these ideas, they apply them through hands-on activities and projects. Their intuition, curiosity, and problem-solving abilities consistently exceed expectations, demonstrating the impact of early exposure to STEM. In addition to SMALC, VantTec developed C.I.M.A., a volunteer initiative created to explore how engineering can improve the way girls learn about their bodies. In collaboration with GYO, the student association dedicated to gynecology and obstetrics, we designed an interactive, technology-focused educational experience that provided clear, stigma-free information about menstruation in a safe and supportive environment. The session included a programming workshop in which participants

developed their own menstrual cycle calculators using Python. To extend the impact of C.I.M.A. Beyond in-person workshops, VantTec created a dedicated section on our official website ([vanttec.com](http://vanttec.com)), allowing girls to access reliable educational content, tools, and resources regardless of their location. This ensures continuity of learning and accessibility long after the workshop ends.

Both SMALC and C.I.M.A. reflect VantTec's belief that meaningful innovation occurs when engineering is practiced with empathy and purpose. By helping children and young girls recognize their ability to create, question, and solve problems, these initiatives strengthen communities and inspire future generations to confidently participate in technology and engineering.