

Candidate Information Template

CANDIDATE NAME

Alberto MUNOZ

CANDIDATE EMAIL ADDRESS

amunoz@tec.mx

CANDIDATE AFFILIATION AND ADDRESS

Tec de Monterrey
Monterrey, Nuevo León
México

IEEE MEMBER NUMBER

30693

COUNTRY OF RESIDENCE

México

HOW WOULD YOU CATEGORIZE YOUR CURRENT ORGANIZATION?

☐ Academia

POSITION SOUGHT

member of the Administrative Committee (AdCom) of the IEEE Robotics and Automation Society.

BIOGRAPHY

Please provide a biographical statement exclusive of your IEEE activities. (150 words maximum)

Dr. Luis Alberto Muñoz Ubando is a professor at Tecnológico de Monterrey, where he teaches and conducts research in robotics, computer vision, artificial intelligence, intelligent systems, and data science. He holds graduate degrees in intelligent robotics and vision and robotics from INRIA/ENSIMAG in Grenoble, France, and completed postdoctoral training at the University of Oxford, followed by a senior research appointment at TU Wien. His research interests include dexterous and humanoid manipulation, autonomous navigation, deep learning, surgical robotics, reinforcement learning, and brain-computer interfaces. He has advised graduate students, authored more than 100 publications, and contributed to international projects in innovation, data

science, and technology development. Beyond academia, he has served as a consultant for the World Bank and the Inter-American Development Bank, supported technology-based entrepreneurship, and promoted science and technology outreach through conferences, articles, courses, and robotics initiatives.

IEEE ACTIVITIES

Please list your IEEE positions with dates of service.

1. I have served the IEEE community in several volunteer and professional roles since 1996. My IEEE-related service includes:
2. 1996–present: Reviewer/evaluator for IEEE conferences, journals, and technical activities in robotics, computer vision, control, intelligent systems, and related areas.
3. 1997: Organizing committee participant, IEEE/RSJ International Conference on Intelligent Robots and Systems — IROS 1997, Grenoble, France.
4. 1997–present: Contributor and participant in multiple IEEE conferences, including robotics, automation, intelligent systems, engineering education, and human-centered technology events.
5. 2000–present: Reviewer and technical contributor for IEEE venues, including IEEE Transactions on Systems, Man, and Cybernetics, IEEE Transactions on Robotics, IEEE ICRA, and IEEE IROS.
6. 2023–present: Distinguished ROS-Industrial Americas Chapter Founder for Mexico at Tecnológico de Monterrey.

QUALIFICATIONS

What are your qualifications for this position? i.e., what makes you an ideal candidate for this position?

I believe I am well qualified to serve on the IEEE Robotics and Automation Society Administrative Committee because my career has combined research, education, entrepreneurship, international collaboration, and institutional service in robotics and intelligent systems. I am a professor at Tecnológico de Monterrey, where I teach and conduct research in robotics, computer vision, artificial intelligence, data science, intelligent systems, autonomous navigation, surgical robotics, brain-computer interfaces, and dexterous manipulation.

My academic formation includes graduate studies in intelligent robotics and vision and robotics at INRIA/ENSIMAG in Grenoble, postdoctoral training at the University of Oxford, and a senior research appointment at TU Wien. Over more than three decades, I have contributed to robotics through publications, student supervision, industry collaboration, entrepreneurship, and international projects. I have authored more than 100 publications, advised graduate students, participated in major robotics competitions, and helped connect students with global research and industrial opportunities.

My profile is particularly relevant to IEEE RAS because I work at the intersection of robotics research, robotics education, industrial deployment, and talent development. I have built academic initiatives that expose undergraduate and graduate students to real robotics systems,

including ROS/ROS2, autonomous navigation, manipulation, computer vision, human-robot interaction, haptics, and AI-enabled robotics. I also bring experience in technology transfer, public and private sector consulting, startup development, and regional innovation ecosystems. I would bring to AdCom a perspective from Latin America, from robotics education at scale, and from the challenge of building bridges between research, industry, entrepreneurship, and social impact.

MAJOR ACCOMPLISHMENTS

List the major contribution(s) (up to five) you have brought to IEEE in your previous assignments. If you have not volunteered for IEEE before, list relevant contributions you have made with other organizations or in related work experience.

1. Longstanding technical service to IEEE venues. I have served as reviewer and evaluator for IEEE-related journals and conferences, including IEEE Transactions on Robotics, IEEE Transactions on Systems, Man, and Cybernetics, IEEE ICRA, IEEE IROS, and other robotics and intelligent systems venues. This service has allowed me to support the quality and growth of the robotics research community.
2. Support for international robotics conferences and community building. I participated in the organization of IROS 1997 in Grenoble, France, and have remained active in the international robotics community through conferences, publications, reviews, student participation, and research collaboration.
3. Development of robotics education and talent pipelines. At Tecnológico de Monterrey, I have helped develop robotics education experiences that take students from theory to practice in autonomous navigation, manipulation, ROS-based systems, computer vision, artificial intelligence, and human-centered robotics. These efforts have produced student projects, publications, competitions, and international placements.
4. Advancement of robotics through competitions and applied projects. My students and teams have participated successfully in international robotics challenges, including the XPrize ANA Avatar Challenge, the Interactive Service Robot Competition in Cyberspace at IROS, the AirLab Robotics Challenge, and other applied robotics initiatives. These experiences have strengthened the connection between academic learning and real-world robotic systems.
5. Regional leadership in robotics and industrial innovation. I was recognized as a Distinguished ROS-Industrial Americas Chapter Founder for Mexico at Tecnológico de Monterrey. I have also contributed to technology-based entrepreneurship, industrial automation projects, and innovation ecosystems, helping connect robotics research with manufacturing, healthcare, education, and social impact.

POSITION STATEMENT

If elected to the position, what are your plans and how will they help support the mission of IEEE RAS?

If elected to the IEEE RAS Administrative Committee, I would work to strengthen the Society through four priorities.

First, I would support the expansion of robotics education by promoting scalable, hands-on, project-based learning experiences that integrate ROS/ROS2, AI, computer vision, manipulation, autonomous navigation, and human-robot interaction. IEEE RAS can play a central role in preparing the next generation of roboticists, especially by connecting students with real platforms, open-source tools, competitions, and industry-relevant challenges.

Second, I would promote stronger bridges between academia, industry, and entrepreneurship. Robotics is moving rapidly from laboratories into hospitals, factories, farms, homes, logistics centers, and public spaces. IEEE RAS can help define best practices, educational programs, technical communities, and innovation pathways that allow research to become responsible, useful, and deployable technology.

Third, I would advocate for a more globally inclusive RAS. Latin America, and the Global South more broadly, have enormous talent and urgent robotics needs in manufacturing, healthcare, agriculture, mobility, disaster response, and education. I would support initiatives that increase participation from underrepresented regions through mentoring, student chapters, regional workshops, hybrid events, summer schools, open educational resources, and stronger links with local industry and universities.

Fourth, I would support RAS leadership in emerging areas such as embodied AI, surgical robotics, haptics, brain-computer interfaces, human-centered robotics, physical AI, and intelligent manipulation. These areas require not only technical excellence but also ethical awareness, reproducibility, education, and interdisciplinary collaboration.

My goal would be to help IEEE RAS remain the leading global home for robotics and automation while making it more accessible, more connected to real-world needs, and more effective in developing the people who will build the next generation of robotic systems.

COMMITMENT TO SERVICE

I, Luis Alberto Muñoz Ubando, hereby certify that if elected, I will serve in the position to which I am elected for the term of the office.