

Candidate Information Template

CANDIDATE NAME

Gregory Dudek

CANDIDATE EMAIL ADDRESS

dudek@cim.mcgill.ca

CANDIDATE AFFILIATION AND ADDRESS

Professor of Computer Science
McGill University
3480 University Street
Montreal, QC, Canada H3A 2A7

IEEE MEMBER NUMBER

90227468

POSITION SOUGHT

AdCom member

BIOGRAPHY (150 words max)

Gregory Dudek is a Distinguished James McGill Professor in the School of Computer Science and an Associate member of the Department of Electrical and Computer Engineering at McGill University. He is co-founder and CTO of Independent Robotics Inc. From 2019-2024 he was a VP, Chief Scientist and Lab Head for Samsung Electronics, and from 2012-2024 he served as Scientific Director and Lead PI of the NSERC Canadian Field Robotics Network and its successor, the Canadian Robotics Network. He previously directed McGill's School of Computer Science and its Research Center for Intelligent Machines. He is an IEEE Fellow and a recipient of the IEEE Montreal Section Gold Medal and the CS-Can Lifetime Achievement Award.

He holds a PhD in Computer Science from the University of Toronto and has authored or co-authored over 300 research publications spanning robot perception, localization and mapping, marine robotics, AI, and telecommunications.

IEEE ACTIVITIES

(List your IEEE positions in the following order in point form)

COMMITTEES/BOARDS:

AdCom 2024-2026 (elected)
Member: RAS Educational Activities Board (EAB)
Member: RAS Industrial Activities Board (IAB)
Member: RAS Long-Range Planning Committee
Member: RAS Science and Tech Watch
Member: RAS Entrepreneurship Ecosystem Committee

AdCom 2019-2022 (ex-officio)

REGIONS: North America

SECTIONS/CHAPTERS:

Montreal

CONFERENCES (selected):

- General chair, International Marine Robotics Workshop 2002-2026 (annual)
- Co-Chair, RSS Workshop on Visual Learning and Reasoning for Robotic Manipulation, 2020.
- General Chair, International Conference on Robotics and Automation (ICRA), 2019.
- Program Committee member, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2017.
- Area Chair, Computer and Robot Vision (CRV), 2017.
- Robotics Science and Systems, Advisory Board member, 2011-2016.
- Program Co-Chair, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2015.
- Robotics Science and Systems, Program Committee, 2009,2008,2012.
- General and PC Co-Chair, 13th International Symposium on Experimental Robotics, ISER 2012, June, 2012.
- North American Program Co-Chair, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2010.
- Program Committee member, Awards Chair, etc: ICRA, IROS, CVPR
- Program Committee member, Awards Chair, General Chair for non-IEEE meetings including: ISER, Computer and Robot Vision, ICPR, AAAI, etc.

OTHER:

QUALIFICATIONS

I have conducted my own research, served on government granting panels in North America and Europe, developed and managed academic programs, worked for non-governmental organizations, and worked for robotics-oriented companies. In doing that, I have been exposed to RAS and IEEE from many viewpoints: as a researcher, administrator, organizer, sponsor, industrial researcher and entrepreneur.

As Distinguished James McGill Professor at McGill University, I have been involved in developing the robotics community for many years in several capacities, both in research and pedagogy. In addition to developing my own research program, mentoring students, and publishing hundreds of papers on various topics in robotics, I have invested a major part of my career in building our community at all scales: within my university, nationally, and globally. Seeing the way research is conducted, disseminated, funded and exploited in different settings and on different continents (e.g. North America, Europe and Asia) has given me a useful perspective. For example, I have served on European Horizon 2020 funding panels, whose style and priorities differ markedly from those often seen in North America. The needs and expectations of RAS from a large company are likewise quite different from those of our academic members.

For 12 years I served as Scientific Director and Lead PI for the NSERC Canadian Robotics Network and its predecessor, the NSERC Canadian Field Robotics Network, a national research network that supported robotics research in Canada and linked more than a dozen universities with many companies interested in developing robotics solutions. For the prior decade I served as president of CIPPRS, the Canadian Image Processing and Pattern Recognition Society and the Canadian member society of IAPR, where I helped develop the conference "Computer and Robot Vision" (now the "Conference on Robotics and Vision"), which serves as a Canadian-based forum on IEEE Xplore for robotics research.

As VP, Chief Scientist and Lab Head for Samsung Electronics (2019-2024), I gained experience building robotics and AI capacity and technologies at multinational scale.

I also served as Director of McGill's Center for Intelligent Machines, and as Director (i.e. Department Chair) of McGill's School of Computer Science, where for 8 years I helped develop the Vision, AI and Robotics research portfolio. I founded Independent Robotics Inc., a startup company that specializes in using modern AI for robotic autonomy. I also co-founded and led the Samsung AI Center in Montreal from 2019-2024. Across these roles, I managed budgets of many tens of millions of dollars and oversaw the annual activities of hundreds of graduate students and thousands of undergraduates.

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.)

- As part of the RAS AdCom I served on the Educational Activities Board, Industrial Activities Board, Long-Range Planning Committee, Science and Tech Watch activities, and the Entrepreneurship Ecosystem Committee. I have particularly worked to expand industrial liaison and engagement, venture outreach, and the vision of what our community can do. Building a lab for a major corporation and also developing a startup company have given me a useful perspective complementary to what I have as a professor.
- As General Chair of ICRA 2019, we exceeded prior attendance numbers, introduced the 6+N page quota for papers (with Jaydev Desai and Venkat Krovi), returned a healthy but non-excessive budget surplus, and won the IEEE iCON award for the best IEEE conference of the year.
- As President of CIPPRS (above) I converted a pre-existing small vision conference (Vision Interface) into a venue for robotics as well as computer vision, now listed on IEEE Xplore. This conference serves as a venue to link researchers, especially graduate students working at the intersection of robotics, AI, computer vision and computer graphics.
- From 2012-2024 I served as founder, Lead PI and Director of the NSERC Canadian Field Robotics Network and its successor, the Canadian Robotics Network, which funded graduate students in robotics, supported equipment and academic travel across roughly a dozen universities, and provided academic-industrial cooperation across roughly 20 companies.
- For more than two decades I have organized an annual marine robotics research field mission/workshop at the Bellairs Research Institute in the Caribbean that brings researchers from several countries together for a combination of academic talks and intensive field testing and development. Attendees have gone on to become faculty at top universities and to positions at top technology companies. Over time, I have also taken a seat at this non-profit Institute as a board member, with a mandate to encourage and nurture new research in robotics as well as other disciplines including marine biology.

POSITION STATEMENT

Let me start simply: I am passionate about robotics, I love our community, and I have devoted my career to helping it grow. I grew up with the classical vision of a robotic future, and have worked as an individual contributor, academic administrator, robotics startup founder, and multinational corporate VP. I have had some fantastic successes and seen a few failures, so I have a sense for what works and what doesn't. If I can help our community realize that future, it would be my privilege. At this stage of my career, I am doing this to serve a community that has given me a great deal.

The fundamental role of RAS is to foster the development and dissemination of knowledge, but some of the mechanisms we have used are having difficulty scaling to the level of success we have had. I have been working to help our community, through RAS, adapt to rapid change and challenges that are partly the byproduct of our own success. These challenges include a growing rate of progress and publication, increased practical relevance, and greater societal and geopolitical consequences as robotics becomes more important. These challenges call for changes in how we disseminate results, connect with companies and governments that want to use robotics, and develop realistic policies and standards for robotics applications.

As robotics leverages more of the advances from within our discipline and from broader AI, this is going to be an exciting, challenging and potentially destabilizing period. We are passing a critical threshold in technological capacity and synergy with AI and allied fields. We need to support some fantastic opportunities while also taking seriously the risks in the technology and possible public anxiety. During my career I have seen robotics mature from an esoteric domain with limited practical feasibility to one in which robust robots can exhibit astounding capabilities, supported by a mature body of theory. The next five years promise to be tumultuous and exciting, and RAS will need to be vibrant and open to an expanding mission.

Some directions in which I would like to see RAS further develop include: (1) supporting robotics as a first-rank academic discipline with structures that match its maturity, while preserving its links with AI and the other fields that make it distinctive; (2) developing methods to cope with the growing deluge of publications by novel publication and validation mechanisms that embrace the vibrance of open access while still providing vetted quality control and exposure associated with IEEE; (3) finding ways to support the networking venues we have used so well while accommodating the growing size of the community; and (4) helping academic researchers and industrial partners work together to put research into practice.

This is our time. Through another term on the RAS AdCom, I would like to help us realize it.

COMMITMENT TO SERVICE

I, Gregory Dudek, hereby certify that if elected, I will serve in the position to which I am elected for the term of the office.

A handwritten signature in black ink, appearing to read 'Gregory Dudek', written in a cursive style.