Agricultural Biological Cognitive Robotics Initiative

abc

Call for Research Development Projects
June 2021

BGU is happy to announce a new call of the ABC Robotics Initiative

The initiative aims to advance collaborative, interdisciplinary and multidisciplinary Cognitive Robotics research at BGU. This call focuses mainly on (i) endowing robots with intelligent perception, interaction, planning and action capabilities that allow them to reason, learn and operate in complex human populated environments (ii) use robotics developments or applications, to improve people's wellbeing. The call will focus on the main themes of the new Innovation District in Beer Sheva (Health and Desert/AgTech, Energy tech and Water tech) and to pending calls of the Innovation Authority (HRI, Bio-Convergence and Nanomedicine).

This call will support **translational/applied <u>robotics</u>** research and development. Translational research refers to the "translation" of basic scientific findings in a lab setting into potential robotics technology or application. The ideas/technologies developed under this initiative must be able to be validated in the lab/relevant environment (corresponding to TRL levels 3-4 of Horizon2020 framework; Appendix 1).

Initiative's targets will be reached by forming **new** (i.e., not a continuation of previous programs) interdisciplinary/ multidisciplinary Research Development Projects (RDP's), attracting excelling BGU researchers to robotics research, enhancing international collaboration with leading research groups and recruiting additional research funds via competitive grants. Each RDP will include **2-3 faculty** from different disciplines / departments and several graduate students (collaborative advisors and/or from different departments).

Funds ranging from 10,000 to 15,000$ per year for 3 years will be allocated for each project. Each RDP will be able to apply for funding for one PhD or MSc/MA student. Students will be funded separately based on excellence provided matching funds from departments/faculty and personal research funds (matching can be allocated from the RDPs). The projects will be funded for one year and will be granted extension after proof of project feasibility and student recruit.

During the course of the program, each approved RDP will be required to submit annual reports which will be reviewed. Researchers and students will be expected to actively participate in the ABC Robotics monthly seminars and in the annual ABC Robotics conference, present work at international conferences (ABC robotics initiative will financially assist in supporting student participation in international robotics conferences), submit publications to leading robotics journals, host lab visits, update the website and leverage the proposed research to attract additional funds.

Researchers are obliged to present/publish in robotics related avenues
and ensure the leveraging of funds.

The RDPs will be reviewed by both external and internal reviewers.
Winning projects will be announced at the beginning of the upcoming academic year.

Proposals can be submitted and led by any full time BGU Faculty Member*
Deadline for submission: July 18, 2021

*each researcher can submit one proposal as PI, however can collaborate in other proposals.

Please submit a 3-year research proposal* in English which details the following:
- Research Innovation – contribution beyond State of the Art
- Research objectives
- Compliance with listed above domains of Cognitive Robotics and the focus on translational/applied research
- Three-year detailed research plan, indicating timetable, tasks, milestones and responsibilities.
- List of participating researchers, indicating specifically the contribution and involvement of the Principal Investigator and each researcher.
- Previous success of researchers (collaborations, research funds, publications).
- Achievements of previous RDP (if relevant).
- Tasks for each of the graduate students and funding sources.
- Potential for industrial application (IP) if exists.
- Support letter from stakeholders if relevant.
- International collaborations if exist and matching funds/expertise provided.
- Budget details and justification.
- Specific plans and timetable to submit the proposal to other competitive funding agencies (specify fund name/s, e.g., MOST/BSF/GIF/DFG/EU/Innovation Authority) and/or specific international funded collaborations (including cooperative research students).
- Optional matching funds.

*up to 4 single spaced pages, Font 12.

In addition, each PI should submit brief CV including description of main expertise/lab activities (4-5 lines) and robotics publications and research grants in last 10 years.

One page of preliminary results can be added if needed.

Preference will be given to proposals received from new BGU faculty, international collaborations, and projects supported by industry or other stakeholders (support letter must be added to the proposal). Please contact Danny Shtaier of BGU Negev for industry support dshtaier@bgu.ac.il.

Questions and answers: On June 20th we will hold a meeting 1-3pm to answer questions and clarify issues that may arise during the proposal preparation. We ask you to send your questions to abc-robotics@bgu.ac.il by June 13th, one week before the meeting.

All submissions and enquiries should be sent to: abc-robotics@bgu.ac.il

Yael Edan
Director, ABC Robotics Initiative

Appendix 1: Technology Readiness Levels (TRL)
TRL 1 – basic principles observed
TRL 2 – technology concept formulated
TRL 3 – experimental proof of concept
TRL 4 – technology validated in lab
TRL 5 – technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
TRL 6 – technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)
TRL 7 – system prototype demonstration in operational environment
TRL 8 – system complete and qualified
TRL 9 – actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space)

agricultural biological & cognitive robotics

www.bgu.ac.il/abc-robotics