Proposal Status | MAIN

Organization: Pace University New York Campus

Review #1

Proposal Number:	0710790
Performing Organization:	Pace University
NSF Program:	Robust Intelligence
Principal Investigator:	Benjamin, David P
Proposal Title:	Cognitive Robot Schemas: Integrating Perception, Language and Planning in a Mobile Robot
Rating:	Very Good

REVIEW:

What is the intellectual merit of the proposed activity?

A common architecture for perception, problem solving, and communications seems like very plausible approach to the important goal of reducing the brittleness of current systems. The potential benefits of success in this project could be substantial, reducing the dependence of robotic systems on independent modules whose integration presents significant challenges. Initial results involving implementation of RS in Soar, NL-Soar, and visual modeling provide evidence of the feasibility of the approach.

I feel some concern that it will be difficult to make significant progress on all the aspects of this project within its 3-year scope. In particular, simultaneously making significant advances on the visual world model, Langacker's cognitive grammar, and self-similar structure-based synthesis and decomposition seems quite ambitious.

What are the broader impacts of the proposed activity?

The case for a broader impact could be stronger. Collaboration among researchers in robotics, and linguistics and other cognitive scientists is desirable, but specific benefits should be identified. Involving students in the project, particularly those of underrepresented groups, is important, but it is not clear why this is more true of this project than of any other at the same institution.

Summary Statement

The goal of this proposal is development of a unified cognitive architecture for robots that provides a common framework for perception, action, problem solving, and communication. Development of such an architecture is important because most current robots lack flexibility in task selection and must therefore be manual programmed for each task. The proposed architecture is an ambitious effort to integrate RS and Soar with a visual world model, Langacker's cognitive grammar, and techniques for schema synthesis and decomposition based on self-similar structure.

Back to Proposal Status Detail

Download Adobe Acrobat Reader for viewing PDF files

National Science Foundation
4201 Wilson Boulevard, Arlington, Virginia 22230, USA
Tel: 703-292-5111, FIRS: 800-877-8339 | TDD: 703-292-5090

Privacy and Security