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January 30th, 2009**To whom it may concern**

This letter is to recommend the MSc degree project “*A Network Robot System for Object Identification and Localization*”, by Alexei Borissov and Jakob Janecek, for the SAIS award for best Master's thesis in the area of AI.

The work reported in Alexei Borissov and Jakob Janecek's thesis was carried out in the context of the International Master's Program in “Robotics and Intelligent Systems” at Örebro University (officially presented on June 16th, 2008). The thesis focuses on robotics for domestic assistance, and was carried out within the smart home facility in our Mobile Robotics Lab. The aim of the work was to develop a novel approach to identify and localize every-day objects in a home environment. The paradigmatic application example is a person asking a robotic assistant “where did I put my glasses?”.

The results of this project have a strong scientific merit, that reaches far beyond what is usually expected of a MSc degree project. Alexei Borissov and Jakob Janecek have developed an original technique to solve the target problem, in which a mobile robot cooperates with a set of distributed sensors embedded in the environment in order to find the desired object. This solution goes in the direction of the most advanced trend in domestic and service robotics, which is to exploit the cooperation between robotic agents and pervasive sensing and reasoning capabilities. Among the novel contributions of the thesis are an algorithm for fast computation of fuzzy global position estimates and the combined use of color based vision in conjunction with feature based recognition.

The research value of the work by Alexei Borissov and Jakob Janecek is testified by the fact that this work has been accepted for presentation at the workshop “Network Robot Systems” (Nice, France, September 26, 2008), an annual international scientific venue focusing on the integration of robots and smart environments.

Having been in charge of the day-to-day supervision of Alexei Borissov and Jakob Janecek during their MSc work, I can testify to their ability to draw state-of-the-art techniques from different scientific communities within the area of AI, as well as their strong ability to use these techniques to obtain an integrated functioning prototype. During the course of their work, the students have demonstrated the capability to initiate investigation independently, and have learned how to transform theoretical results into well-engineered solutions. In addition to the technical and technological challenges, their thesis work has been driven by strong user-oriented requirements, specifically elderly assistance. This has required a consistent effort on their part to produce results that retain a high degree of robustness to real-world conditions that would be found in a real domestic environment. Also in this respect, Alexei Borissov and Jakob Janecek have shown a remarkable degree of understanding of the problems involved.

For all the reasons above, I believe that Alexei Borissov and Jakob Janecek's thesis is an ideal candidate for the SAIS award.

Sincerely,
Federico Pecora, PhD