Georgia Tech College of Computing

To the CoC academic advisors,

In the summer of 2024 I taught a special topics course CS 4803 RBA – Robotics: AI Techniques. This is an undergraduate version of the CS 7638 Robotics AI Techniques course (taught as a special topic course). The conversion to undergraduate level was accomplished by removing the topics of Stochastic motion, path smoothing and the bicycle motion model from the course, as well as removing the "challenge" part C from each of the projects.

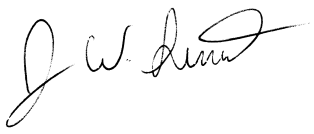
The course covers the majority of CS 7638 topics, specifically: robot localization with histogram filters, Kalman filters and particle filters, PID control, A* path planning, Value Iteration policy generation, and Simultaneous Localization and Mapping (SLAM).

This is a programming project intensive course in Python. Successful completion of the course indicates that students have implemented each of the above listed algorithms in Python and used it to solve a simulated problem in the domain of mobile robotics.

CS 7638 is an elective course of the masters level specialization in Computational Perception and Robotics. In my professional opinion, this undergraduate special topics course based upon CS7638 is most like the existing GaTech undergraduate courses CS 3630 Introduction to Perception and Robotics and CS4649 Robot Intelligence & Planning and it most closely fits into the Computing and Intelligence thread.

I would recommend allowing it to serve as pick course in Approaches to Intelligence or Embodied Intelligence within the Intelligence thread or substitute as one of the above named courses.

Sincerely,



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