Three funded graduate research assistantships are currently available to work in the VEMI Lab, directed by Dr. Nicholas Giudice in the Department of Spatial Information Science and Engineering at the University of Maine, USA. Students will register for the degree of Masters or PhD.

All of the assistantships offer a generous support package, including a competitive stipend, complete tuition expenses, a book purchase program, a contribution to health insurance, and conference travel. All positions are immediately available but we are prepared to wait for as long as it takes for the right candidates. More information about the VEMI lab and these positions can be found at: www.vemilab.org or by emailing Dr. Giudice at: giudice@spatial.maine.edu.

Assistantship 1 relates to funding from the National Institutes of Health (NIH). The project investigates how spatial information from different input modalities (vision, haptics, 3D audio, and spatial language) is learned, represented in memory, and acted upon when supporting spatial behaviors with both blind and sighted people. Some of the research methodologies used include Psychophysical approaches, virtual environment technology and behavioral techniques for measuring spatial cognition abilities. This project affords an excellent opportunity for a student to get involved with basic questions about multisensory information processing as well as considering applications of the research to the design of non-visual interfaces. A strong background in Experimental Psychology / Cognitive Science is important and programming skills are desired for students interested in this assistantship.

We have two funded projects in the lab investigating the optimal information requirements for the design of dynamically-updated multimodal displays to support indoor navigation. Where GPS and large commercial GIS including streets and points of interest (POI) have revolutionized outdoor navigation, there is no equivalent positioning technology or databases to support indoor travel, e.g. where-am-I information, route guidance, or access to POI.

Assistantship 2 relates to a recent project funded by the National Science Foundation (NSF) investigating the best design for visual and multimodal interfaces to be used in a portable navigation system providing seamless outdoor/indoor (OI) assistance. As environmental information, data structures, technology aids, and navigation behavior differ greatly between outdoor and indoor spaces, this project represents an important step in bridging the OI space gap.

Assistantship 3 relates to a project funded by the NSF investigating the minimal information requirements for efficient spatial learning and navigation without vision, and usability research with 3D audio, haptic cues, and speech-based interfaces to support these behaviors. The ambitious goal is to develop an infrastructure independent, autonomous system for supporting indoor navigation for the blind.

Candidates for assistantships 2 and 3 will be working extensively with virtual environment technology, scripting, and the design and usability of multimodal interfaces. These positions require technical skills and are best suited for people with backgrounds in disciplines such as computer science, mechanical or electrical engineering, cognitive psychology / cognitive science, or behavioral geography.

The University of Maine is an Equal Opportunity/Affirmative Action Employer.