

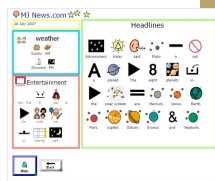


Accessible Robotic Programming for Students with Disabilities (ARoPability)

Robotics-based activities has been shown to encourage non-traditional students to consider careers in computing and has even been adopted as part of core computer-science curriculum at a number of Universities. Unfortunately, the concept of non-traditional student in this arena has not traditionally extended to encompass students with visual or physical impairments. As such, we seek to investigate the use of alternative interface modalities to engage students with disabilities in robotics-based programming activities. We seek to answer questions such as “What characteristics of robotics-based activities need to be transformed to engage students with visual impairments?” “What technologies can be adapted to enable achievement of robotics-based programming activities for students with physical impairments?” “Are there existing teaching modalities already employed by educators that can be used to train these new computing professionals?” and “What methods can be exploited to broaden participation in computing for students with visual or physical impairments?”

The major outcomes of this project are focused on:

- **Alternative programming tools** that transforms computing technologies into accessible modules for students with visual or physical impairments.
- **Robotic Institutes at the Center for the Visually Impaired and with the National Federation of the Blind** to assess ability to engage students with visual impairments.
- **Robotic Institutes in conjunction with Children’s Healthcare of Atlanta** to assess ability to engage students with physical impairments.
- **Teacher training kits and documentation** to provide teachers with modules that can be used for incorporating students with disabilities in the classroom environment.



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