PROGRAM FOR INDIVIDUALIZED LEARNING
UNIVERSITY OF MINNESOTA

NARRATIVE TRANSCRIPT FOR: Alan Kilian

PROJECT TITLE: Design and Construct a Holonomic Motion Platform and Control System

PROJECT DESCRIPTION: This project will produce a mechanical device that can move about on a hard-surfaced floor while carrying enough batteries to be able to move for 30 minutes. The device will be able to move in any direction while keeping the same orientation as well as change its orientation while keeping the same location. The device will be controlled through a "tether" wire from a desktop PC.

PROJECT DURATION: September 2005 – September 2008

PROJECT EVALUATOR: *William Durfee, Professor, Mechanical Engineering, University of Minnesota, Minneapolis, MN.

Alan successfully completed the project that was outlined in the proposal.

The first objective was to predict power consumption and battery performance. Alan was able to do this within typical limits for practical engineering projects. The second objective was to demonstrate the ability to select suitable electronic components. The design of the motor controller is excellent and one that I may use in my own projects. The third objective was to demonstrate use of PCB tools. The packaging of tightly packed surface mount components into a small overall form factor is evidence that this objective was met. The final objective was to design and fabricate the mechanical system. The completed design demonstrated this objective.

Overall, the design process and the design meets or exceeds industry standards and exceeds what is done by the typical University of Minnesota undergraduate student. The report does a nice job of describing the design.

*University of Minnesota Faculty

10/01/08