AIMS^2 Research Project in ECE – Ruting Jia

Research Duration: Fall 2017 – Spring 2018

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Title of Project:

<Solving real world problems by using Intelligent Control Techniques>

Goals and Objectives of the Project, Expectations and Outcomes

Describe briefly what students can expect to learn by participating in this project.

GOAL: Throughout the project, students will be introduced to a class of intelligent control techniques that use various artificial intelligence computing approaches like neural networks, fuzzy logic, evolutionary computation and genetic algorithms.

OUTCOMES: 1. It is intended to have students learn different intelligent control techniques, learn the fundamentals of several software packages. 2. Students will choose a real world problem such as cruise control of car, or formation control of airships and apply the intelligent control technique learned throughout the project. 3. Several software packages will be utilized, such as: Matlab(Toolboxes that apply), Simulink computer simulations, Labview computer simulation(if time allows).

ADVANCED GOAL: Implement the complete system model as well as the designed intelligent controller in Simulink and conduct system performance analysis.

PREREQUISITES: Be a participant of the AIMS2 program.

At the end of the project, students present the results and should be able to:

1. Apply at least one Intelligent Control technique

2. Design, implement and test a solution for a real world problem.