

# **Autonomous Mobile Robots**

## **CAI 5815 - Project**

**(Graduate Students Only)**

**Spring 2025**

**“1-Page Project Description” Due Date: 3-31-25**

**“PowerPoint” Due Date: 4-25-25**

**Presentations: 4-29-25 & 5-1-25**

The following sections provide a general description for graduate project.

### **A. Project Description**

All projects are individual. You need to choose a research topic related to “autonomous mobile robotics”, such as algorithms, architectures, applications, etc. You need to write a 1-Page Project Description and a PowerPoint document to present in class.

### **B. 1-Page Project Description**

The 1-Page Project Description should contain: a) Title, b) Research goal, and c) Short abstract.

### **C. PowerPoint**

The PowerPoint (see file template) should describe the research topic of your choice and should be used during the presentation. The presentation should be no more than 20 pages, and it should include all the following sections:

- Title – 1 page. Title of project and author (student) name.
- Objectives – 1 page. Summary of objectives described in the project.
- Description – 10 to 15 pages. Full project description providing full details of work. It should include text, figures, and possibly videos.
- Conclusions – 1 page. Conclusions and discussion of project.
- References – 1 page. List of work being referenced in the project.

### **D. Presentation Schedule**

Presentations should be no more than 15 minutes including 5 minutes left for questions.

Presentation schedule will be as follows:

<b>Presentation Schedule</b>	<b>Graduate Student</b>	<b>Project Name</b>
Tue April 29, 3:30pm	Franz Bascope Jordan	Swarm Robotics
Tue April 29, 3:45pm	Angeline Dorvil	Autonomous nanorobotics in Medicine
Tue April 29, 4:00pm	Le, Van Dinh	Adaptive Control for Drone Stabilization
Tue April 29, 4:15pm	Ajay Nattanmai	AI Control of Autonomous Mobile Robots
Tue May 1, 3:30pm	Bharat Nair	Visual SLAM
Tue May 1, 3:45pm	David Le	Path Planning Algorithms
Tue May 1, 4:00pm	Rudinsky, Jason	Graph Traversal Algorithms

### **E. Submission & Evaluation**

Upload each document to Canvas by the due date. Note that projects do not add to the final grade, but if missed, there will be a 10-point penalty from the total final grade for the course.