



Sabbatical Proposal - Overview

Expanding Capabilities by Learning the Robot Operating System (ROS) for Software Engineering Research

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Sabbatical: Fall 2026 - Winter 2027

Why?

- Gain experience with the Robot Operating System (ROS) and its simulator Gazebo for software engineering research and developing educational modules
- Existing experience with lightweight simulators
 - Not very realistic!
- ROS is often considered to be painful but far more realistic

Winter 2026	Fall 2026	Winter 2027
Pre-planning	OER learning module development	Research project
ROS/Gazebo setup	Conversion of existing project to ROS	Grant writing
Discussions with B. Cheng	OER dissemination	Research dissemination

OER materials: enable students (either research or in-classroom) to quickly get up and running with robotics simulations

Post-sabbatical:

- Develop SE/AI-focused robotics course
- Disseminate remaining work and present outcomes to GVSU