



# 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 (minimizing uncertainty for ROS-based systems)
ROS/Gazebo setup	Conversion of existing project to ROS	Grant writing (NSF SHF Future CoRe, AFRL Foundations of Trusted Systems, US Naval Research Laboratory Basic/Applied Research)
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
- Present outcomes to GVSU