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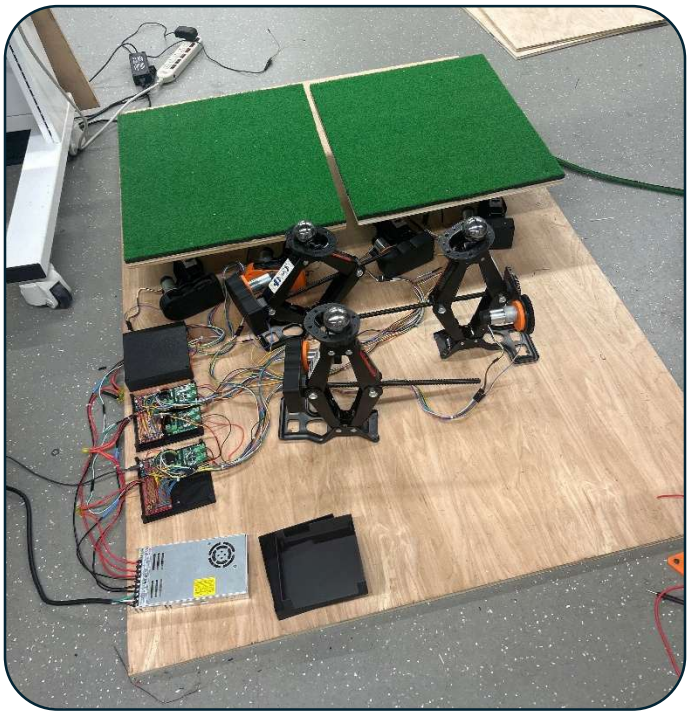
Golf Simulator

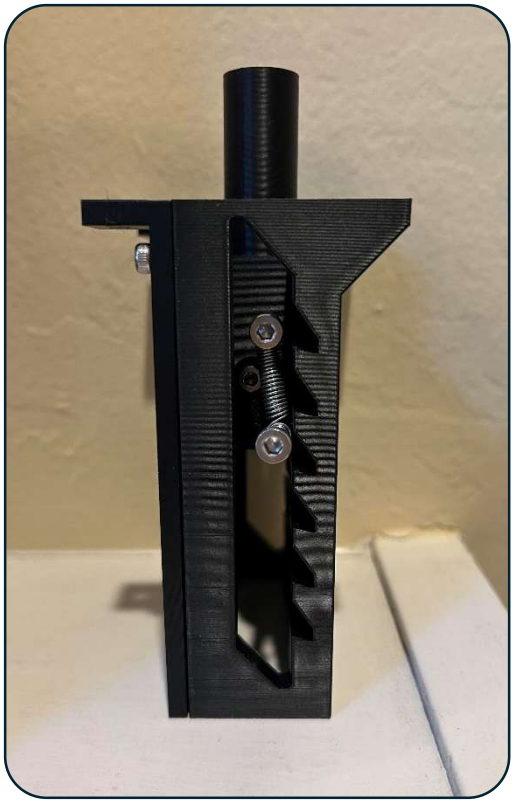
What?

- The Golf Simulator consists of three platforms, each supported by three motor-driven carjacks connected through gear trains, which raise and lower the surfaces to mimic terrain
- Designed as a foundation for future entertainment systems and research platforms that require programmable terrain environments

How?

- Designing a mechanism that enables each platform to tilt up or down and translate vertically while maintaining horizontal spacing between joints
- Designing an adjustable golf tee mechanism that raises and lowers to replicate conditions where a ball may rest above or be sunken into the ground





DESIGN

- Designed in Fusion360
- Redesigned ball-and-socket joint with inward-angled carjacks and lateral freedom, enabling platform tilt and vertical motion while maintaining joint spacing
- Designed a lipped electrical box with an open top, allowing visibility of the gears during operation for inspection
- Designed a custom linear ratcheting mechanism using a spring-loaded pawl and a toothed rack to create an adjustable golf tee
- Implemented DFMA techniques by designing self-aligning components with rounded interlocking features, enabling quick assembly/reassembly for testing while improving resistance to shear stresses