Problem Statement

Unmanned underwater vehicles (UUVs) are a crucial component of the oceans research and require reliable thrusting mechanisms for their traverse inside the water. At first, it may seem like they are solvable by an open-loop control system. However, this initial perception fails to account for the potential slippage prone to occur in unfavorable water condition. By re-thinking our approach to accommodate the closed-loop control system into the thruster mechanism, we can fix the problem of slippage via error correction.

Aim of the Project

The aim of the project is to build a working close-loop control system to prevent the slippage of the magnetically coupled thruster mechanism of the unmanned underwater vehicle sitting in the System Controls Lab at the Faculty of Mechanical Engineering, GIK Institute.

Block Diagram

Tachometer Code

The Hall Effect sensor generates a pulse whenever it detects the magnet. The code for tachometer computes the RPMs using the rate of pulse generation from the respective shafts.

Steps to Completion of the Project