# Electromagnetic linear actuator for arm prosthesis

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## Context

Generally, rotative motors are used as driving sources of prostheses and active orthoses to help restore lost abilities resulting from an amputation or a disease. However, reproducing natural movements with this type of actuator remains challenging, this is why the development of actuators with an action closer to that of a muscle has been emerging for years.

Electromagnetic linear actuators could be an interesting solution, as they would have the potential to replicate the contraction and elongation principle of muscles.

## Objectives

The goal of the master thesis will be :

- To determine through a literature review if this type of actuator would be better adapted to an arm prosthesis for amputees, or to an active arm orthosis for people who have lost muscles strength
- To define a full requirements list of the actuator for the chosen option
- To adapt and optimize the existing actuator to meet the requirements
- To develop a first proof of concept

## Skills

- CAD software
- Matlab
- Electromagnetism
- Prototyping