

### **Masters Dissertation Ideas**

- Friction model using different identification techniques.
- Friction model for multilayer soft tissue.
- Koopman theory for system identification.
- Comparison of friction models
  - LuGre model
  - Dahl model
  - Relative velocity model
  - Stribeck model
- Axial forces as function of depth and insertion velocity  $F = F(x, u)$  (surface)
- Identification using data from analytical models
- Compare ultrasound deformations with graphics

### **Extensions**

- FEM and ML for online control