

# Project proposal

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Title: Kalman Filter Design for Arm Positioning State  
 Supervisor:  
 Timeframe: Fall 2020

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EPFL Xplore is an interdisciplinary project whose aim is to design and develop a Rover to participate in two international competitions: the University Rover Challenge and the European Rover Challenge. According to the competitions requirements, one of the four main tasks that will have to be achieved is the equipment servicing task: this mission is based on the use of a robotic arm to manipulate objects and operate a control panel (mounted with joysticks, buttons, keyboards, etc...). To do so, we need a Kalman Filter to precisely track the position of the arm.

## Project description



### Problematic

The student will have to choose the sensors necessary for the acquisition of the robotic arm's position (Hardware task) and design a Kalman Filter for a precise position tracing of all joints (Software Task).

The student may use any sensor that is deemed necessary for this task as long as the total cost does not exceed 100 CHF.

The testing tool of the Kalman Filter shall be developed by the student also.

### Contact

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