Achraf khelifi touhami

✉ **Email:** achrafkhelefi1888@gmail.com 📞 **Phone:** (+213) 669894425

ABOUT ME

Control engineering graduate with a background in control and simulation for a wide range of systems. Experience working in (GNC/Flight control) and electrical machines.

Highly analytical, motivated, and skilled at solving problems, quick learner, and enthusiast. I can work well both independently and in a team.

don't miss to take a look at my LinkedIn profile:

*** Linkedin: https://www.linkedin.com/in/khelifi-touhami-achraf-498596220/

EDUCATION AND TRAINING

[05/10/2020 – 12/06/2022]

Msc Control and Systems

University Of Larbi Ben M'hidi O.E.B

Final grade: 70%
Thesis: Sliding Mode based DC Motor speed Control
Modules I've learned:

- Multivariable Linear Systems Control (pole placement, PID)
- Optimization, Signal Processing, and Systems Identification (CVX,cplex,gurobi, and Gams).
- Nonlinear systems and Optimal control (LQR/LQG, Backstepping, Lyapunov theory, feedback linearization, dynamic inversion)
- Intelligent control (Fuzzy Logic, Neural Networks based Automatic Control)
- Predictive and adaptive control (MPC, MRAC,h-*infinity*)
- power electronics/Electric Drives

[13/09/2017 – 06/06/2020]

Bsc Electronics engineering

University Of Larbi Ben M'hidi O.E.B

PROJECTS

[03/02/2022 – 04/06/2022]   **Sensorless based Sliding mode-DC motor speed control.**

This is my master's degree graduation thesis, it's about DC motor speed control using the sliding mode method (SMC).

• The motor is controlled based on 3 mathematical models such as cascade, reduced, and complete models.

• The control method has proved that it's robust against DC motor parameters changing and able to track a reference speed.

• The technique has shown excellent performance with minimal error against classical techniques such as PI.

Thesis link: **https://bit.ly/3owz3G0**

[03/12/2020 – 09/01/2021]   **development of Control system for a 3-DOF Rocket.**

This is my final project for the module: "Multivariable Linear Systems Control ".

• The dynamics of the system were modelled by Newton's 2 Law.

• The control scheme is full-state feedback that was designed via pole placement and linearizing the dynamics around a hover point.

• The vehicle attempts to follow a reference trajectory that includes an ascent, translation, and then landing.

<u>Project link</u>: **https://bit.ly/3unBq0u**

[05/12/2020 – 12/12/2020]   **Simulation of SVPWM-Inverter on Simulink MATLAB**

This project is about the simulation of space vector pulse width modulation (SVPWM) on Simulink, the project was a part of the final assessment grade of a module called "Association of inverter-drive systems ".

• I have built a mathematical model of BLDC and the SVPWM algorithm from scratch without using any kind of Simulink libraries.

<u>Link</u>: **https://bit.ly/3wjtSNh**

SKILLS

Technical skills

• Sensorless Motors control (DC/BLDC/PMSM) using field-oriented control (SPWM/ PWM-FOC) and state observers.
• efficiency in MS tools: word, excel, PowerPoint.
• Model based design (MBD): Matlab/Simulink/Stateflow.
• Model-based testing: MIL/SIL.
• Software development life cycle (SDLC): v-cycle, agile.
• Code generation: targetlink, embedded coder.
• Static code analysis: polyspace.
• Unit testing: Google test, TPT.
• operating systems: Linux, windows
• programming languages and tools: Matlab, C/C++, object-oriented (oop).
• software standards: MISRA, JSF++, Maab.
• State estimation and sensor fusion using Kalman filter (EKF, UKF).
• design of Guidance, Navigation and Control (GNC) algorithms.
• 3DOF/6DOF modelling and simulation especially for aerospace systems.

Soft skills

1. Willingness to learn new tools, techniques, and technologies quickly and effectively.
2. capability to work in a team and a Strong ability to work independently if it is needed.
3. Ability to communicate (written and oral).
4. self-motivated with ready to Take responsibility.
5. Fluent in English and Arabic, lower-intermediate French, and German.