Pierre FABRE

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WORK

WANDERCRAFT *april 2023 - today*
Robotic Control Engineer in the Dynamic Walk team *Paris*
- *Wandercraft develops the first self-stabilized personal walking exoskeleton*
- Design controllers (MPC, PID, ...)
- Prototype in Python and implement in C++
- Test in physical simulation and on the real robot
- Analyze results and tune parameters
- Present results to the team and merge in the code base (Git)

SAFRAN *5 months - 2022*
Control Engineer Intern *Paris*
- Identification, modelling and simulation of the system to control
- Design and implementation from scratch of a linear MPC in Matlab
- Test in simulation and on a test bench
- Analyze of the influence of parameters and tune to meet specifications

LAAS-CNRS *5 months - 2021*
Control Theory Research Intern *Toulouse*
- *Event-based control for non-linear systems affine in the control*
- Bibliography, Feedback Linearization, Lyapunov Stability, LMI solving

PROJECTS

Cart-Pole Swing-Up *2021 - today*
- Define specifications and buy components (motor, sensors, electronics, ...)
- Mechanical design, 3D printing, assembly and wiring
- Code the firmware (Arduino) to interact with the robot
- Code the simulation in Python using the open-source library Pinocchio
- Code the NMPC in Python using Crocoddyl to achieve the swing up
- GitHub : github.com/Armandpl/furuta

Walking Controller of a biped robot using RL *6 months - 2023*
- Client : Gepetto team from LAAS-CNRS

Member of crew 240 in a 3 weeks Mars Analog mission *Utah Desert - 2022*
- Mission Reports : mars.bde-supaero.fr/crew-240/ ◇ Videos : @m.a.r.ssupaero3072

EDUCATION

ISAE-SUPAERO *2019 - 2023*
Master in Aerospace Engineering, Major in Control Theory *Toulouse*
- Identification, estimation, optimal control, robust control, non-linear control

Universidad Politécnica de Madrid *6 months - 2020*
Exchange Semester in the Master of Data Science and Machine Learning *Madrid*
- Machine Learning, Statistical Data Analysis, Data Visualization, Big Data.

Lycée Michel Montaigne *2017 - 2019*
Classe Préparatoire aux grandes Ecoles *Bordeaux*
- Linear Algebra, Mechanics

ONLINE CLASSES

Machine Learning, Andrew Ng *Coursera, 11 weeks*

LINKS

LinkedIn : linkedin.com/in/p-fabre/ ◇ **Website** : pierfabre.github.io