Minota Matewos Dache

Rouen, France
(+33) 649 29 39 40 minotadache@gmail.com LinkedIn YouTube Github

Summary

Highly dedicated Automatic control and Robotics Professional, with a strong foundation in automation, control systems, computer vision, mechatronics, and sensor fusion for embedded and robotic systems. Skilled in system modeling, trajectory generation, and GNC algorithm development, with hands-on experience using ROS 2, Python, and MATLAB for real-time testing and simulation. Excited about autonomous systems, reinforcement learning, and collaborative innovation, and eager to contribute to the productivity of your team. Known for being autonomous and driven by curiosity, I'm actively looking for this position and immediately available.

Experience

Institut des Sciences du Mouvement(ISM-CNRS Lab) **Mar 2024 – Aug 2024**
Robotics Engineer Intern *Marseille, France*

- Developed 4+ algorithms for cohesion of quadcopter drone, including obstacle avoidance, disturbance rejection, navigation strategy, and bio-inspired visual learning.Link
- Simulated and validated 4+ algorithms in a ROS 2–Gazebo environment using a fleet of drones. Link

Warka Trading House PLC **Jul 2021 – Oct 2021**
Robotics Engineer Intern *Addis Ababa, Ethiopia*

- Gained hands-on experience on automation and system integration for a motorcycle assembly line using sensors, actuators, and PLCs. Link
- Modeled an automated motorcycle lift in SolidWorks and MATLAB Simulink to improve workshop efficiency by 100% through reduced manual handling.Link

MT Engineering **May 2020 – Aug 2024**
YouTube Educator as a Mechatronics Engineer *Online*

- Developed and published 200+ comprehensive video tutorials encompassing Solidworks, CATIA-V5, MATLAB, and Simulink, attracting 10,000+ subscribers and establishing channel as a leading educational resource for engineering software. Link
- Published 5+ robotics projects on YouTube to promote technical outreach.

Projects

Cohesion of Fleet of Drones using Bioinspired visual Learning Algorithm Link **Mar 2024 – Aug 2024**

- Implemented a visual learning-based GNC algorithm for drone fleet cohesion, maintaining reference formation and navigating in GPS/GNSS-denied environments with limited processing power and memory.

Autonomous Flight- State of the Art and open Problems Link **Oct 2023 – Feb 2024**

- Investigated advanced methods in UAV state estimation, object detection, trajectory planning, flight control/ mechanics, and reinforcement learning for enhanced decision-making.

2D-Object Tracking using Kalman Filter **May 2023 – Jun 2023**

- Implemented a Kalman filter in Python for 2D object tracking and state estimation, applicable to navigation and localization tasks.

Decoupling Control-Based Trajectory Tracking of a Mobile Robot, (Link) **May 2023 – Jun 2023**

- Modeled decoupling-based control in MATLAB/Simulink, then deployed it on the Mtracker mobile robot, achieving optimized trajectory tracking.

Adaptive Control of Arieal Robot under Disturbance (MIAC, MRAC, ADRC). Link **Mar 2023 – Jun 2023**

- Simulated 7+ adaptive control techniques (MIAC, MRAC, ADRC) within a high-fidelity aircraft model in MATLAB, improving real-time system stability by 15% under various flight conditions and turbulence.

Design and Simulation of Robocleaner, Link **Mar 2022 – Sep 2022**

- Designed a RoboCleaner 3D model in SOLIDWORKS, laid its circuitry in Proteus Design Suite, and programmed the microcontroller using Arduino UNO for intelligent battery and power monitoring.

Education

University of Paris-saclay **Sep. 2023 – Sep. 2024**
M2 Automatic Control and Robotics *Paris, France*
Specialization in Smart Aerospace and Autonomous Systems

Poznan University of Technology **Feb. 2023 – Sep. 2024**
MSc Automatic Control and Robotics *Poznan, Poland*

Addis Ababa Science and Technology University **Sep. 2017 – Sep 2022**
BSc Degree in Electromechanical Engineering. *Addis Ababa, Ethiopia*

Skills

Languages: C++, MATLAB (Simulink), Python.

Frameworks: PyTorch, Numpy, Pandas, Scikit-Learn, Matplotlib, TensorBoard, Stable-Baselines3.

Developer Tools: ROS2, Gazebo-simulator, Linux, Proteus Design Suite, Siemens logo, SolidWorks, LaTeX,

Soft Skills: Autonomy, Teamwork, Leadership, Rigorousness,Intellectual Curiosity.

Certificates

- AutoMOOC (Master 2 level) on linear control using the state-space approach.(University of Bretagne Occidentale).
- Electrical/Electronic Equipment Servicing (TVET)
- Industrial Electrical Machines and Drives Servicing (TVET)