



**AMERICAN
UNIVERSITY
OF BEIRUT**

Hussein Hussein

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Beirut, 8 March 2026

Letter of Recommendation

To Whom It May Concern,

It is my pleasure to write this letter in support of Mr. Ali Mdaihly, who is currently a Mechanical Engineering student at the American University of Beirut (AUB). Ali has worked with me on several academic and research activities, including a robotics research project conducted within the context of the Vertically Integrated Projects (VIP) program at AUB, and as a student in the Control Systems course that I taught during the Fall 2025/2026 semester. He is also currently enrolled in my Robotics course during the Spring 2025/2026 semester.

Through the VIP research program, Ali contributed to ongoing work in my lab on quadruped robotic locomotion using the Unitree Go1 robot. In this project, he demonstrated strong technical capabilities by successfully running and modifying the locomotion framework of the robot at both high-level and low-level control layers. He implemented and executed the necessary computations for generating locomotion patterns, including the calculation of walking gaits with coordinated swing and stance phases for the robot's legs. This work required understanding the structure of the locomotion controller, interacting with real robotic hardware, and ensuring reliable execution of the control algorithms on the robot platform. Ali showed a high level of autonomy and perseverance while working on this challenging system.

Ali was also one of the top-performing students in the Control Systems course I taught in Fall 2025/2026. The course covers the fundamentals of control system analysis and design, including PID control, lead and lag compensators, and system analysis using both transient response and frequency-domain methods. As part of the course project, students were required to design a mobile robot balancing an inverted pendulum, a classical yet challenging control problem. Ali with his team demonstrated a successful and impressive project, demonstrating their technical capabilities and theoretic understanding of the control materials.

The Robotics course covers the fundamentals of robotics, including robot architecture, kinematics, dynamics, trajectory planning, and control of end-effector motion. In the lab, students learn Robot Operating System (ROS) with Python and C++ programming, along with essential ROS packages, and apply on different types of robots including dog robots and robotic arms. No assessment or projects are yet performed in the course.

Through both coursework and research activities, Ali, one of the top students, has consistently demonstrated strong analytical skills, curiosity, and a solid work ethic. He is capable of understanding complex engineering systems, implementing advanced algorithms, and working

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effectively on real robotic platforms. His motivation and technical abilities make him well prepared for advanced studies or professional work.

Sincerely,
Hussein Hussein