

Clément DUMERIL

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UC Berkeley MEng candidate focused on robotics, control, autonomous systems, and AI for physical systems.

EDUCATION

Combined GPA: 3.82/4

University of California, Berkeley - Berkeley, CA

2026-2027

Master of Engineering (MEng), Mechanical Engineering - Control of Robotic & Autonomous Systems

- Fall 2026: Introduction to Robotics (Horowitz), Predictive Control Systems (Borrelli), Drone Digital Twins (Zohdi), Physics-Inspired Machine Learning (Krishnapriyan).

Arts et Métiers ParisTech - Paris, France

2024-2027

Combined BS and MS in Mechanical and Industrial Engineering, recipient of the Louis Magne and AFAM Sequoia scholarships.

- Coursework in mechanics, electronics, energetics, materials, manufacturing, product design, industrial operations, and vibrations.

Lycée Raspail - Paris, France

2021-2023

Classes Préparatoires - Mathematics, Physics, Industrial Science

- Two-year intensive preparation for competitive engineering-school entrance exams; selected for the PT* honors class.

WORK EXPERIENCE

Co-founder - Polytechnia

May 2026-Present

Engineering consulting firm supporting hardware and industrial projects from technical scoping to prototyping.

- Lead product framing, engineering studies, simulation, prototyping, and client proposals; built an open-source internal toolchain and secured the firm's first major client contracts.

Commercial & Project Director - AMJE - Student-Led Professional Consulting Firm

July 2025-May 2026

France's #1 Junior Enterprise - Commercial strategy, technical proposals, budgeting, and client relations.

- Led commercial strategy as a board member, contributing to a record \$350k annual revenue; managed a EUR60k+ vehicle immobilization R&D project for the French Ministry of Interior, awarded the Alten Prize 2025.

Project Manager - Engineering Consulting - French Ministry of Interior

June 2025-September 2026

design of an innovative vehicle immobilization system.

- Led a 5-member team on a \$75k mission guiding the CAD design, simulation, and end-to-end integration of complex electromechanical and hydraulic components

Consultant AI & Performance - TECHWAVE & OPEO

May 2025-July 2025

Industrial performance and transformation consulting.

- Designed and integrated AI models within internal tools to support decision-making and operational

SELECTED PROJECTS

AI-Driven Energy-Based Predictive Control for Aerial Robots

2026-2027

MEng Capstone - UC Berkeley EECS / ARPL | Advisor: Prof. Giuseppe Loianno

- In progress: developing learning-accelerated, energy-aware NMPC for small fixed-wing aerial robots; exploring learned warm starts, neural approximations and reinforcement learning for real-time trajectory optimization and sim-to-real deployment.

Robot Manipulation & Mobile Robotics Laboratory

Fall 2026

EECS/MECENG C106A - Prof. Roberto Horowitz | In Progress

- ROS 2 laboratory work on UR7e manipulators and TurtleBots spanning kinematics, Jacobians, dynamics, sensing, computer vision, planning, and model-based feedback control; final hardware project integrates sensing, planning and actuation.

Biomimetic Quiet Fan Simulation Package

2026

Industrial Project - Multiphysics Simulation - Polytechnia

- Combined acoustic CFD, structural/modal analysis and dynamic shock simulation in OpenFOAM, Code_Aster and CalculiX to evaluate noise, vibration, and structural behavior.

UR5e Vision + PINN Inverse Kinematics

2026

Robotics / Scientific ML Project

- Built a PyTorch PINN for six-DOF inverse kinematics, integrated vision-based coordinate regression in Webots, embedded robot kinematics in the learning pipeline, and benchmarked against an analytical IK solver.

Helmholtz Resonator Solver & Physics-Inspired ML Study

2023-2026

Research Project - Acoustic Attenuation | Physics-Inspired ML extension planned for Fall 2026

- Developed an axisymmetric FDM acoustic solver verified with MMS/GCI checks and a mesh-free PINN; planned Berkeley research extension will compare physics-inspired neural approaches with classical numerical solvers.

LEADERSHIP & ACHIEVEMENT

Trained and led 30 student project managers at AMJE, France's #1-ranked Junior Enterprise; coordinated 50+ engineering consulting missions and helped redesign internal ERP workflows.

SKILLS

Programming & Robotics: Python, C++, PyTorch, ROS 2, Webots, RoboGuide, computer vision, kinematics

Control: MPC/NMPC, LQR, PID, optimization

Simulation & CAD: STAR-CCM+, OpenFOAM, ABAQUS, COMSOL, CalculiX, Code_Aster, CATIA V5, 3DEXPERIENCE

Languages: French, English, German, Swahili