DANIEL ABRAHAM ELMALEH

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LANGUAGES

- English (C2)
- French (Native)
- Hebrew (Native)

SKILLS

- **Programming:**

Python | Java | C++ | MATLAB
Assembly | Git - GitHub/GitLab
TensorFlow & Keras library
OpenGL graphical coding
LATEX (Overleaf) | VS Code | Docker

- **Engineering:**

CATIA | CST simulation | Fusion 360
3D printing | LTSpice | FPGA
SMD procedures for PCBs
Comsol multiphisics

- **Management & Soft skills:**

Presenting | Organizational Skills
Teamwork and management
Stakeholder Management
Communication | Attention to detail

- **Miscellaneous:**

Manual driving license (2014)
Notion | Slack | Chat GPT
Adobe Premiere Pro | MS Teams
eLab

SUMMARY

French citizenship.
Last year Msc student in Micro-engineering with focus on Robotics at EPFL.
Interested in interdisplinary domains where I can express and learn technical knowledge, Science and managment in Robotics, Deep-learning and Quantum tech.

EDUCATION & PROJECTS

- **MSc, Micro-engineering** 2023- PRESENT
École polytechnique fédérale de Lausanne - EPFL Lausanne, CH
  - Courses and projects carried out in the fields of Photonics, Robotics, Bio/MedTech, Neuroscience, MEMS, Nanotechnology, ML & DL, Venture capital.
  - **HIGHLIGHTED PROJECTS:**
    - **Autonomous solar panel cleaner robot (Group of 6)**
      - Full prototype product design, System engineering & management.
      - Involved mainly in Electronics, software development & implementation.
    - **Autonomous Mobile Robot (Group of 4)**
      - Kalman filter development and implementation.
    - **10 minutes documentary. Writing, Filming & Editing (Group of 2)**
  - **HIGHLIGHTED COURSES:**
    Product design & System Engineering | mobile robotics | Machine learning.
    Deep Learning for Optical Imaging | Neural interfaces | Bio-Nano-Chip design.
    Quantum science | MEMS | **Controlling Behavior in Animals and Robots.**
  - **TEACHING ASSISTANT**
    - Physics TA at EPFL for prep. year (CMS) and UNIL for 1st years in forensic Science and Pharma.

- **BSc, Micro-engineering** 2020- 2023
École polytechnique fédérale de Lausanne - EPFL Lausanne, CH
  - Basics of science & engineering with a combination of electrical, mechanical, materials engineering and CS.
  - **PROJECTS:**
    - **C++**
      - Developing a virtual world simulator with simple AI aspects and graphic interface (gtk).
    - **Atmel AVR Micro-controller based device**
      - Room occupation monitor controlling an entrance door. Using assembly language, servo motor, distance sensors, buzzer and a LED panel screen.
    - **Balanced-IsoSpring-Oscillator (Group of 5)**
      - Isotropic oscillator with two degrees of freedom, insensitive to linear and angular accelerations, for a time base of a mechanical pendulum.

- **Electrical, Electronics & Comm. Engineering** 2022- 2023
3ème année - Cycle Ingénieur
École Polytechnique de Paris - l'X Palaiseau, FR
  - Gained knowledge in mathematical formalism, signal processing, semi-conductor physics, computer graphics, International economics, Org. theory, Intel. systems.
  - Gained experience in independent work and cultural knowledge as well as France's social and professional structures.
  - **PROJECTS:**
    - **Conception of an Autonomous Mobile Robot (Group of 2)**
      - Design and Fab. From scratch (Motors, Raspberry-pi, Sensors, fiberglass & 3D printing).
      - Coded using C++, C and ROS.
      - Path following & SLAM.
    - **C++**
      - Graphics programming of a 3D scene (Open-GL, CGP).

HOBBIES & INTERESTS

- Cinema, Tennis, Philosophy, Science, Jazz and Classical Music Enthusiast.
- Skier, Plays Tennis, volleyball and soccer.
- Used to play Competitive Tennis for 12 years.
- Played Music - Piano, Guitar and trombone (Solfège).
- **CERTIFICATIONS:**
  - Tennis Instructor
  - Bartender & Barista
  - Screenwriting

PERSONAL

- Motivated and passionate about science and technology.
- Curious attitude to stimulating work and learning opportunity.

- **Prep. Year - Mathematics, Physics & CS** 2019- 2020
  Cours de mathématiques spéciales - CMS
  École polytechnique fédérale de Lausanne - EPFL Lausanne, CH
  - Mathematics (Analysis, Algebra, Analytical Geometry), Physics, Biology, Chemistry & **CS (Java object oriented)**

WORK EXPERIENCE

- **Software & Systems Engineering intern**
  Lino Biotech (Miltenyi Biotec) 2025 - PRESENT
  Zurich, CH

  Worked within the **software team** on system testing, software development, and experimental work supporting device improvement and process development. Gained knowledge in confocal molography technology and system level of the machine.

  Responsibilities:
  - Collaborated across software, hardware and application teams to identify issues, propose improvements and managed user requests.
  - Performed **coding** tasks, **debugging**, feature validation, reviewed merge requests to support code quality and development workflows, using Jira for tickets management and executed software and system-level testing.
  - Conducted hands-on work: Lab work, sample preparation, component checks, assembly/disassembly and troubleshooting of electrical and mechanical parts.
  - Analysed, designed and executed experiments to support **process development**, for debugging, performance analysis, workflow optimisation, **feature validation**, and system improvement.
  - Evaluated new parts and prototype components through structured testing.
  - **Tools**: Termina, Python, Git, GitLab, Jira, Teams, VS Code, Docker, Codex, eLab.

- **Research Project Intern**
  Bio-nano-photonic System Lab (BIOS) 2025 - PRESENT
  EPFL Lausanne, CH
  - Development of Surface enhanced Raman Spectroscopy for continuous monitoring of Creatinine in human serum using **transformers and Conv NN (Keras)**.
  - Data analysis and ML on python.
  - Project carried as part of the EPFL team at the SensUs competition - Photonics Team leader.
  - Carried out at the lab of prof. Hatice Altug, BIOS.

  Nanophotonics and metrology Lab (NAM) 2024 - 2025
  EPFL Lausanne, CH
  - Preparation, growth, etching & characterization of 2D gold flakes.
  - Research about Anti-Stokes phenomena in crystalline metals.
  - **Software development (data analysis, GUI, ML)** for thickness prediction of 2D gold flakes using color mapping.
  - Material roughness and thickness characterization using AFM.
  - Optical measurements & **data analysis** of 2D gold flakes response. Study of power, wavelength, polarization & orientation.
  - Carried out at the lab of prof. Oliver Martin's, NAM.

  Laboratory of Semi-Conductor Materials (LMSC) 2023
  EPFL Lausanne, CH
  - Characterization, analysis and research of semiconductor nano-wires.
  - **Software development** for results and data analysis (python).
  - Carried out at the lab of prof. Anna Fontcuberta i Morral, LSMC.

INVOLVEMENT

Student Body Member 2024 - PRESENT

EPFL STI - School of Engineering Council

- Attending meetings, participating in decisions while analyzing needs of the school.