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Alex TOUSSAINT

Profile

I'm a highly motivated engineering student with a strong passion for robotics, electronics, and computer science. I thrive on taking initiative and tackling significant challenges.
Starting March 2024, I'm actively seeking a six-month internship in software engineering where I can dive deep and practise my bias for action.

You can explore my portfolio on my personal website www.alextoussaint.com

Education

September 2021 - to present — **Master of Science at CentraleSupélec**, *Paris-Saclay University, France*, Courses followed: **Statistics and Machine Learning, Control Theory, Continuum Mechanics, Fluid Mechanics, Electronics design and VHDL, Electrical Systems, Partial Derivative Equations, Economics, Java Programming, Algorithms and Computability, Communication Networks**

September 2019 to July 2021 — **Preparatory Program for Top Graduate Schools**, *Lycée* Jean Baptiste Say, Paris, Intensive and advanced two-year program in Maths, Physics, Chemistry and Engineering Sciences

June 2019 — **High school diploma with highest honors**, *IT specialization*, Lycée Louis Armand Eaubonne

Experience

September 2023 to January 2024 — **MBDA Systems** Implementation and fine-tuning of a digital filter algorithm for aerial navigation.

September 2022 to June 2023 — CFO of SBCS, CentraleSupélec's sound and light student association. We made around 215k€ on a one-year period organizing events for other schools. I automated most of the accounting, led multiple events and **developed an ERP software** for our use-case now used routinely.

September 2018 sold in September 2021 — **Co-founded and built kaktana.com**, a cryptocurrency-trading bot platform. Our customer obsession and technical expertise made it a very successful business. (**Javascript, Python, React, Django, Go, AWS Lambda, Linux Servers, Docker Swarm, Git, Bitcoin and Crypto Exchange trading APIs)**

September 2019 to June 2020 — Managed a local robotics club, **teaching Arduino programming and electronics**.

June 2019 — **Freelance work** as contractor on cryptocurrency trading bots.

Personal projects

2021 to 2023 — I created a real-time **3d ultrasonic scanner** working in the air with a phased-array transceiver. The project was featured on hackaday.com and made it to the front page of HackerNews. (**C/C++, High-Speed digital design, low-level MCU registers programming, Signal Processing, 3d visualization, KiCad, Verilog, FPGA**)

2016 to 2023 — **Built a quadcopter drone from scratch** from the carbon fiber frame to the control software on a Teensy MCU. (**PID controllers, attitude estimation, carbon fiber machining, electronics and sensors**)

2019 — French National Engineering Competition: Designed and built a prototype of a robotic arm that was controlled by both an **electrocardiogram and computer vision**. The arm was able to locate and grasp a ball using brain electromagnetic signals and a pair of cameras to guide its movement. (**Signal processing, electronics, C/C++, OpenCV**)

August 2018 — Built with friends a high-altitude baloon (27km) using a custom PCB for data logging. We logged a lot of very interesting data, notably around sound wave progression in near-space and heat dissipation of electronics.**(Electronics, data logging and visualization)**

February 2019 — Built a shooting game environment and trained an agent on it using a genetic algorithm and a 2*7 Neural Network implented with Numpy. **(Python, Numpy, Neural Networks)**

Before 2016 — Built many model airplanes

Skills

Programming — C, C++, Python, Python, Javascript, Django, React, Go, Verilog, Java, Nim

Languages — Fluent English, Native French

Hobbies

Programming, Swimming, Running and Scuba Diving