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Aaron Vidal

PERSONAL STATEMENT

Design Engineer bridging embedded electronics and human-computer interaction with a proven track record of quickly mastering new concepts and technologies. Completed a BEng in Electronic Engineering with First Class Honours while working full-time on space hardware at Airbus. Demonstrating exceptional time management, adaptability, and problem-solving abilities. Enthusiastic public speaker and science communicator, eager to share knowledge and inspire others through participating in outreach events and engagement in STEM fields.

EDUCATION AND QUALIFICATIONS

2025 – 2026 **MSc Design Engineering – Imperial College London**

2021 – 2024 **BEng (Hons) Electronic Engineering – Southampton Solent University**
Grade: First Class with Honours

- 4-year course completed in 3 years while also working at Airbus
- Thesis: Generative Reasoning for Internet of Things

RELEVANT EXPERIENCE

September 2021 – September 2025 ***Airbus***

Integrated Breadboard Team – ExoMars Rover

- Reverse engineered legacy firmware and built representative hardware for the integrated breadboard, enabling guidance-algorithm development and end-to-end test.
- Designed mounting bracket for localisation camera in Fusion 360, for AM in polycarbonate.
- Selected and qualified an STM32 based microcontroller against I/O and power requirements, defined interfaces to the rover's onboard computer over serial.
- Developed C firmware using VS Code and PlatformIO, engineered process to deploy any future firmware updates over the air. Reducing deployment time by ~80 percent
- Designed command and telemetry API for on-board-computer to be wrapped by a ROS 2 node.
- Collaborated with PhD researchers from the CLUPI (Close-Up Imager) project to capture requirements for the implementation of their hardware analogue with suitable TC.

Hardware Responsible Engineer – Proteus Modem

- Hardware Engineer contributing to design, development and verification of Satellite Modems.
- Implemented hardware-based helicopter blade simulator for RF waveform testing, successfully demonstrated to the European Space Agency. Proposed second generation simulator based on Raspberry Pi 5, achieving 98 percent cost reduction.
- Led iterative additive manufacturing campaign for proteus diorama development, interdisciplinary collaboration across sites for rapid ideation.
- Enhancing filter performance by hand soldering SMD components to increase signal attenuation and improve linearity error.
- Diagnosis and resolution of hardware faults. Designing testing solutions including voltage monitoring with custom instrumentation.
- Analysing memory buffers of RFSoC FPGA using JTAG to UART ICs.
- Validating CPLD firmware for modem generation of 1PPS clock from 10 MHz reference.
- Led transition from proprietary to open-source FPGA JTAG tooling, saving £20k in licensing.
- Producing technical documentation such as requirement specification, test descriptions and procedures. Ensuring alignment with industry standards.
- Working closely with the Validation, Verification and Test team to prove hardware functionality to specified requirements.
- Supporting environmental and electromagnetic compliance testing of satellite modems.

- Conducting production tests on manufacture samples, assessing quality and compliance with build standard criteria.

Outreach

- Supported STEM education through school visits, hands-on workshops, and mentoring, targeting increased participation from underserved groups.

Key Achievement: Balancing Study and Work on a Degree Apprenticeship

ADDITIONAL EXPERIENCE

December 2024 – Present ***Outreach STEM Leader – Imperial College London Makerspace***

- Enthusiastic delivery of taught content on Design Theory, Electronics, Soldering, Laser Cutting and others to students during weekday Maker Challenge sessions.
- Co-Leading weekend open-making sessions, mentoring graduates of the Maker Challenge given access to the Makerspace to work on their own projects.

Key Achievement: Returning to teach the program after completing it in 2019

May 2019 – Present ***Freelance Computer Aided and Graphic Design***

- CAD, Product Animation, Graphic Design, Video Editing, Architectural Visualization with VR.

Key Achievement: Working in collaboration with the Dominican Embassy

June 2020 ***Bright Network Tech Internship Experience***

- Researched facial biometrics for banking and presented a development plan, collaborating effectively in early COVID remote work with input from Google, Amazon, Goldman Sachs, and Accenture.

July 2017 ***Nestlé – Head Office, Crawley***

- Rotated through supply chain, sales, marketing, and category management, analysed sales data, and independently produced a marketing campaign proposal.

SKILLS

Category	Skills
Embedded & Firmware	**Hardware**: STM32, ESP32, Raspberry Pi, NVIDIA Jetson, MEMS **Firmware**: C/C++ - **Interfaces**: UART, SPI, I2C, I2S - **Tools**: PlatformIO, VS Code, Git, Linux, Python
Electronics & Fabrication	KiKad - Schematic Capture and PCB Layout - Power and EMC practice DFM/DFA – Additive Manufacture - Hardware Integration & Test
Design & Communication	Fusion 360, Blender, Photoshop, Illustrator Presenting, Mentoring, Outreach, Technical Writing

ACHIVEMENTS AND ACTIVITIES

- Embedded Electronic Systems Design and Development – *Level 6 Apprentice Qualification*
- First place at Imperial College Maker Challenge 2019, commended for oral presentation skills
- Bouldering
- Photography
- Developing storytelling ability via Filmmaking, and VFX practices.
- Combining hobbies of design and electronics through the medium of cosplay.
- Leveraging embedded computing and open-source libraries to create interactive experiences.
- Augmented Reality development in Snapchat Lens Studio. Work reaching over 2 million users.