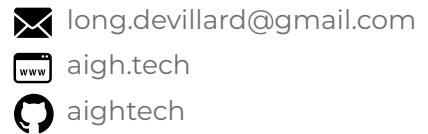


Alexis Devillard

Robotics & AI engineer · PhD researcher



Driven by my interest in human-centred technology, I studied mechatronics and AI at Sorbonne Uni. and completed a PhD in human robotics at Imperial College. I have developed interfaces for neurotech companies and research groups internationally. My work focuses on creating state-of-the-art human-machine interfaces.

Current positions

CEO CleverHand, London	Mechatronics & Robotics developements consulting and open-hardware HMI production and sale	2024 - Ongoing (70%)
► Lead electronics engineer AxonCtrl, London	Intramuscular EMG for advanced human machine interfaces	
► Mechatronics engineer Lyeons, Cambridge	Design and development of a multisensorial stress/anxiety management device for research and commercialisation.	
► Firmware engineer Neubond, London	Surface EMG wearable sensing and haptic feedback for rehabilitation.	
Postdoc Imperial College London	Multisensory sensing and feedback interfaces	2024 - Ongoing (30%)

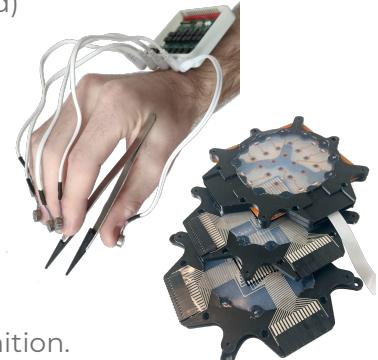
Technical skills

Programming	C/C++ · Python · PyTorch · TensorFlow · Networking · Assembly · Android (Kotlin)
Data & ML	Sig. process. · Spatio-temp. extraction · Classification · Regression · CNN/RNN/GAN/VAE
Mechanical	CAD (SW/Onshape) · 3D printing(FDM/SLA) · Laser cutting · Enclosures & mechanisms
Electronics	PCB (KiCad) · Microsoldering · Sensor & actuator · firmware · Debugging (oscillo., LA)
Tools	Git/GitHub · Markdown · LaTeX · Technical diagrams (Mermaid)

Human interface systems developed

Prenatal haptic stimulator 2024 *w/ L. fabrizi @UCL UK*

Device to study sensorymotor development of prenatal infants.



Nail mounted feedback 2023 *w/ D. Lau @CUHK HongKong*

Fingernail-mounted vibrotactile display for delivering localised tactile feedback.

Electronic-skin sensor 2022 *w/ E. Burdet @IC UK*

The silicone skin sensor to study the mechanisms of objects and textures recognition.

Wearable EMG for research 2021 *w/ N. Jarrasse @ISIR France*

A modular and wearable high density EMG bracelet for affordable research.



APB muscle EMG recording 2021 *w/ C. Mehring @Freiburg Univ.*

Device to study motor unit EMG decomposition for abductor pollicis brevis.

Actuated Rubber Hand exp. 2020 *w/ T. Brouillet @Nanterre Univ.*

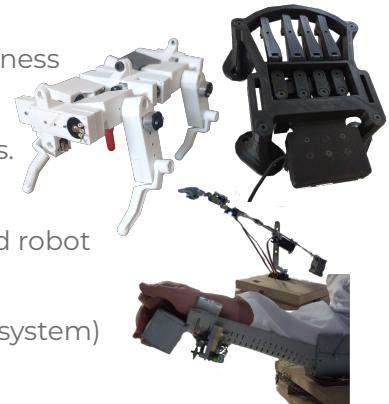
Actuated version of the rubber hand exp. to study the role of agency in embodiment.

Robot assisted prostate biopsy 2020 *w/ M.A. Vitrani @ISIR France*

Device to study motion strategies of a robotic probe constrained by variable stiffness

Mini spot 2020

A centimetres long robot dog with 12 DoF to test balancing and gaits algorithms.



Bipedal exoskeleton 2015

A passive exoskeleton to study walking motion and reproduced it on small biped robot

Tele operated arm 2013

A tele-operated arm from metal scraps, servos (One of my first human interface system)



Education

PhD studies	Imperial College London, UK	2020 - 2024
Bioengineering	Multisensory search engine (haptics, audio, vision)	
Master degree	Sorbonne Université, Paris, France	2018 - 2019
AI	Artificial Intelligence and Multi-agent Systems	
Master degree	Polytech - Sorbonne Université, Paris, France	2016 - 2019
Robotics	Mechatronics, Mechanics, Electronics, Dynamics Control, IT, CAD	
Languages	French (native), English (advanced), Mandarin (beginner), German (beginner)	

Experience

Teaching assistant	Human centered assistive and rehabilitation design.	2021 - 2024
Imperial College London		
Research engineer	· Convertible flying drone control with PX4 software architecture. · Stewart platform control with CANopen bus.	2019 - 2020
ISIR, Sorbonne Univ.		
Internship	Creation of realtime biosignal data acquisition environment.	2021 - 2024
TNE, EPFL, Switzerland		
Research engineer	Development of a wearable EMG interface. It can stream up to 80 dry channels at 2kHz with 12bit of resolution via WiFi or ethernet.	2019 - 2020
ISIR, Sorbonne Univ.		
Internship	Implemented classification and compression algorithms (k-means, VLADs, PCA, product quantization) a "shazam" for video recognition.	2018
VideoLAN, France		
President	· Managed projects, teams & resources. · Created partnerships with banks and companies.	2018 - 2019
Student Robotic club		
Designer	Design of the electronics of solar panel-bag and a children size "jeepney", a typical bus of the Philippines. organization.	2017
Delépine, Philippines		
Teaching	Teaching robotics, mathematics, physics to primary school children.	2015 - 2020
Paris		
Technician	Associative Internships at ROMP Global a prosthesis & orthosis organization. Managed prosthesis 3D printing.	2015
ROMP, Ecuador		

Publications

The Identification of Haptic Invariants in Humans and Their Applications to Robotics		
H. Jörnfeld, A. Devillard, E. Burdet	Multisensory Research	2025
Embodied Tactile Perception of Soft Objects Properties		
A. Dutta, A.W.M. Devillard, Z. Zhang, X. Cheng, E. Burdet		2025
Modular, Multi-Layer e-Skin for Robotics Investigations and Applications		
A.W.M. Devillard, A. Dutta, Z. Zhang, X. Cheng, M. Kaboli, E. Burdet	WHC	2025
Tactile, Audio, and Visual Dataset During Bare Finger Interaction with Textured Surfaces		
A.W.M Devillard, A. Ramasamy, X. Cheng, D. Faux, E. Burdet	(Nature) Scientific Data	2025
Design and Evaluation of a Modular Robotic System for Microsurgery		
J.T. Molina, T. AbuBaker, Y. Huang, X. Cheng, A. Devillard, E. Burdet	IEEE ICRA	2024
Concurrent haptic, audio, visual dataset during bare finger interaction with textured surfaces		
A. Devillard, A. Ramasamy, D. Faux, V. Hayward, E. Burdet	IEEE WHC	2023

Award & Presentations

Workshop	ICRA	Presented extranumery limb robotic bagpack	2024	Yokohama, Jp
Workshop	INTUITIVE	Organised projects about neuro-perception devices	2022	Valletta, Malta
Grant	EPSRC	Accepted grant proposal about human augmentation	2022	London, UK
Workshop	COST	Organised projects about wearable devices	2021	Madrid, Spain
Fellowship	Marie Skłodowska-Curie	EU Network on multisensory perception	2020	London, UK
Competition	Cybathlon	International competition in ISIR's team	2020	Paris, France