JUAN PABLO FORERO

Electronics Engineer & Computer Scientist

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I am an electronics engineer and computer scientist with nine years of experience developing in-whole high-fidelity integrated solutions. My areas of technical expertise range from the physical layer (e.g., simulation, electronics design, embedded architectures, and firmware development) to the application layer (e.g., control algorithms, signal processing, machine learning, and mobile app development). Beyond implementation capabilities, my professional career has also provided me with ample exposure to industry, academia, and entrepreneurship. These experiences have allowed me to remain in the vanguard of technological innovation, establish meaningful synergies between these domains, and drive high-impact social initiatives. Through learning, creating, and innovating, my focus is to open up avenues to enhance peoples' lives.

WORKING EXPERIENCE

10/18 - Present — **Lead Senior Research Engineer** — Auckland, NZ
The University of Auckland - Auckland Bioengineering Institute
Embedded Software & Hardware, Electronics, Digital Signal Processing, Machine Learning

01/17 - 06/18 — **Research Engineer** — Mountain View, USA
Samsung Research America - Think Tank Team
Embedded Software & Hardware, Electronics, Digital Signal Processing, C++, Android

06/14 - 12/16 — **Research Engineer** — Singapore
SUTD University - Augmented Human Lab
Embedded Software & Hardware, Electronics, Android

05/13 - 01/14 — **Visiting Researcher** — Rotterdam, NL
Almende - Organizing Networks
Machine Learning, Computer Vision, Digital Signal Processing, Android

09/11 - 05/13 — **Research Assistant** — Barcelona, Spain
La Salle University, URL - Robotics and Electronics Lab
Simulation, Embedded Software & Hardware, Electronics

STARTUPS

09/20 – Present — **Foundation Engineer** — Auckland, NZ
Korawai Limited- Company No 8174323
Embedded Well-being & Healthcare Solutions

07/19 - Present — **Founder and Member of the Board** — Auckland, NZ
The Linked Horizons Foundation - Trust No. 56814 / Charity Registration No. CC56814
Charity that aims to provide children with equal access to education opportunities

06/19 – 07/20 — **Co-Founder** — Auckland, NZ
Maia Limited - Company No 7516697
Service that uses AI to help mental health clinicians provide better care for their patients

EDUCATION

12/18 - 12/20 **Master of Engineering, Electrical Engineering & Computer Science** Auckland, NZ
The University of Auckland - Thesis First Class Honors
OM: A Comprehensive Tool to Elicit Subjective Vibrotactile Expressions Associated with Contextualised Meaning in Our Everday Lives

09/16 - 01/17 **SMART Innovation Fellowship Program** Singapore
SMART
Grant opportunity that enables faculty and students to pursue exciting new avenues of market-driven research and participate in programmes that will help accelerate their innovations toward commercialization

09/08 - 06/13 **B.S. Electrical Engineering & Computer Science** Barcelona, Spain
La Salle University, URL -Thesis First Class Honors
LS Cubes: Design, Development and Application of an Interactive Platform for Neuropsychological rehabilitation after moderate and severe childhood TBI

PUBLICATIONS

2021 **OM:** A Comprehensive Tool to Elicit Subjective Vibrotactile Expressions Associated with Contextualised Meaning
Conference on Mobile Human-Computer Interaction (Mobile HCI 2021)
Juan Pablo Forero, Hussel Suriyaarachchi Alaeddin Nassani, Haimo Zhang and Suranga Nanayakkara

2020 **Touch me Gently:** Recreating the Perception of Touch using a Shape-Memory Alloy Matrix
Conference on Human Factors in Computing Systems Proceedings (CHI 2020)
Sachith Muthukumarana, Don Samitha Elvitigala, Juan Pablo Forero, Denys Matthies and Suranga Nanayakkara

2019 **M-Hair:** Creating Novel Tactile Feedback by Augmenting the Body Hair to Respond to Magnetic Field
32nd Annual ACM Symposium on User Interface Software and Technology (UIST 2019)
Roger Boldu, Sambhav Jain, Juan Pablo Forero, Haimo Zhang and Suranga Nanayakkara

2017 **InSight:** A Systematic Approach to Create Dynamic Human-Controller-Interaction
8th Augmented Human International Conference
Roger Boldu, Haimo Zhang, Juan Pablo Forero, Sachith Muthukumarana and Suranga Nanayakkara

2016 **Muss-bits:** Ad-Hoc Access to Musical Sound for Deaf Individuals
18th International SIGACCESS Conference on Computers and Accessibility
Benjamin Petry, Thavishi Illandara, Juan Pablo Forero, Suranga Nanayakkara

2015 **postBits:** Using Contextual Locations for Embedding Cloud Information In the Home
Personal and Ubiquitous Computing Journal
Forero, J. P., Fernando, P., Sridhar, P., Withana, A., Nanayakkara, S. C., Steimle, J. and Maes, P

2015 **BWard:** Optical Approach for Reliable in-situ Early Blood Leakage Detection at Catheter Extraction Points
7th IEEE International Conference on Robotics, Automatics and Mechatronics
Juan Pablo Forero, Tsz Him Ching, Chuyi Wu, Chang Yin Chionh, Suranga Nanayakkara and Shaohui Foong

2015 **footNote:** Designing a Cost Effective Plantar Pressure Monitoring System for Diabetic Foot Ulcer Prevention
6th Augmented Human International Conference
Kin Fuai Yong, Juan Pablo Forero, Shaohui Foong, and Suranga Nanayakkara

PATENTS

2019 **Object Detection and Motion Identification Using Electromagnetic Radiation**
US Patent 10,491,736 19/11/19

2017 **On-site device for detecting presence of a liquid**
WO2017010942A1 01/19/17

2016 **Muss-bits**
Provisional Submission 10201610020P 29/11/16

AWARDS

2020 **Kiwrious** – Social Category Award — Auckland, NZ
100K Velocity Challenge
Kiwrious empowers students to engage in scientific inquiries in and out of school

2020 **Maia** — Auckland, NZ
Best Design Awards - Bronze in User Experience
A service that uses the latest in artificial intelligence to help mental health clinicians provide better care for their patients

2019 **The Linked Horizons Foundation** - Qualifiers — Auckland, NZ
100K Velocity Challenge
Linked Horizons aims to provide children with equal access to education and learning opportunities worldwide

2019 **MussBits** — Auckland, NZ
Best Design Awards - Gold in Public Good Award
A wearable device designed to support music listening and music making for deaf users

SKILLS

Software

Programming C, C++, Java (Android), Python, Assembly, HDL, LabView

Frameworks Matlab, Scikit-learn, Pytorch, Pandas

Hardware

Electronics Altium Designer, LTspice, Cadence OrCAD

Other

Graphic & Video Adobe Photoshop, Adobe Illustrator, Adobe Premiere Pro

Languages Spanish, Catalan, English