Diego **Ferigo**

{Electronic · Robotics · Machine Learning} Engineer

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"Machines are so stupid that, if you tell them to do something perfect, they'll do it"

Education

UNIUD (Università degli Studi di Udine) — *Udine, Italy*

M.Sc. in Automation and Robotics - 110/110 magna cum laude — *Oct. 2013 - Apr. 2016*

Thesis: *Design of an embedded platform for a FMG-Controlled prosthetic hand*

UNIUD (Università degli Studi di Udine) — *Udine, Italy*

B.Sc. in Electronic Engineering — *Oct. 2008 - Oct. 2013*

Thesis: *Study of 3D-MID technology for lighting applications in the automotive field*

Experience

Simon Fraser University - MENRVA — *Burnaby, Canada*

Research Assistant — *Jun. 2015 - Mar. 2016*

- Developed an embedded platform that implements a non-conventional and natural control for powered prosthesis using Force Myography and Force Sensing Resistors
- Extensive firmware work on IMUs: configuration, data acquisition, calibration, AHRS, algorithms
- Upper extremities modeling and tracking using dual quaternions and IMUs
- Developed a Beaglebone Black Cape for acquiring data from sensors and actuating a BeBionic3 prosthesis
- Implemented C++ code for the Beaglebone for structuring a dataset from sensors data, creating supervised machine learning models, classifying patient intents in real-time
- Studied and applied machine learning methodologies: SVMs, LDA, PCA, Logistic Regression, ANN
- Performed several data collections on amputees, processed and analyzed datasets
- Main HW & SW developer of MASS Impact Team for Cybathlon 2016 - Zürich

Centro Ricerche Plast-Optica (Automotive Lighting / Magneti Marelli) — *Amaro, Italy*

Intern — *Oct. 2012 - Feb. 2013*

- Pre-industrialization research and development of 3D-MID technology based on Laser Direct Structure
- Characterization of electrical traces grown on different types of plastic substrates (either planar and 3D) realized with injection molding
- Study of various technologies: SMT, Wire Bonding and Flip Chip (Chip On Board) in clean rooms, chemical PCB etching, COB LED phosphor coating, industrial reflow and vapour phase ovens, SEM and X-Rays machines
- Realization of rear lamps prototypes using MID and 3D-MID technology

Skills

Programming	C/C++, Matlab, Python, LaTeX, Bash, HTML, SASS/CSS
EDA / CAD	Plecs, Simetrix/Simplis, Pspice/LTSpice, Eagle CAD, HFSS, Ansoft Designer
Embedded boards	Beaglebone Black, Arduino, Cubieboard, Raspberry Pi
Electronic	PCB printing with CNC and chemical etching, SMD soldering, Chip On Board process
Machine Learning	Linear and Nonlinear Regression, Logistic Regression, SVMs, LDA, PCA, KNN, tSNE, ANN
Other skills	GNU/Linux, Git, Anaconda, Jupyter notebooks, Docker, CMake, Linux kernel configuration

Languages

Italian	English	German
Native proficiency	Full professional proficiency	Elementary proficiency

Publications

Experimental Case Study of a FMG-Controlled Prosthetic Hand — *Frontiers in Neurorobotics*
D. Ferigo, L. Merhi, B. Pousett, C. Menon — *Under review*

Honors & Awards

July 2016, Best Electronic Engineering Graduate - M.Sc., A.A. 2014/2015 — *University of Udine*
Oct 2015, 3 months scholarship for extra UE thesis mobility — *University of Udine*
Dec 2013, Post-graduation scholarship for talented interns — *CRP, Amaro, Italy*

Presentations

Privacy and digital security: phone calls encryption and anonymous web browsing — *Milan, Italy*
Presenter for Wired Next Fest 2016 — *May 2016*

Vicino/Lontano Premio Terzani - Cyber Security for Beginners — *Udine, Italy*
Presenter for <v/l digital> — *May 2015*

Referees

Prof. A. Gasparetto		Prof. C. Menon
University of Udine		Simon Fraser University
alessandro.gasparetto@uniud.it	@	*cmenon@sfu.ca*
Professor of robotics and M.Sc. thesis supervisor		PI of the MENRVA Research Group

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