

Curriculum Vitae

Signal Processing for Application in Healthcare Systems

Personal information

First name / Surname

Cracchiolo Marina, PhD

Work experience

Dates
Occupation or position held
Main activities and responsibilities
Name of employer
Department

November 2016 – July 2020

PhD Student/Fellow in BioRobotics

Characterizing autonomic nervous system activity for the optimization of bioelectronic therapies for chronic diseases.

The BioRobotics Institute, Scuola Superiore Sant'Anna, Pisa.

Translational Neural Engineering Lab

Dates
Occupation or position held
Main activities and responsibilities
Name of employer
Department

September 2018 – June 2019

Internship in Neural decoding & Data Analytics

Recording and Stimulation of Vagus Nerve in rats to treat cardiovascular diseases. Statistical analysis and predictive model development.

The Feinstein Institutes for Medical research, Manhasset, New York.

Neural Decoding & Data Analytics Lab

Dates
Occupation or position held
Main activities and responsibilities
Name of employer
Department

February 2016 – September 2016

Stage

Developing of Advanced Algorithms in MATLAB for signal processing of neural and physiological data.

The BioRobotics Institute, Scuola Superiore Sant'Anna, Pisa.

Translational Neural Engineering Lab

Education

Dates
Title
Thesis
Organization name

November 2016 – April 2020

PhD in BioRobotics

“Neural decoding algorithms for bioelectronic medicine and neuroprosthetics”.

The BioRobotics Institute, Scuola Superiore Sant'Anna, Pisa

Dates
Title
Thesis
Organization name

September 2013 – October 2016

MSc in Biomedical Engineering, final voting 110/110 cum laude

“Analysis of metabolic modulation of Carotid Body neural activity: toward an electroceutical therapy for Diabetes Mellitus”, developed at the BioRobotics Institute - Scuola Superiore Sant'Anna, in collaboration with Universidade Nova de Lisboa and funded by GlaxoSmithKline.

Department of Information Engineering - Università di Pisa, Pisa.

Dates

September 2010 – September 2013

Title **BSc in Biomedical Engineering**, final voting 110/110
 Thesis “*Analysis of the ISET system for the development of humanoid vision*”
 Organization name Department of Information Engineering - Università di Pisa, Pisa.

Personal skills & competences

Mother Tongue Italian
 Other languages

English
 French

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
C1	Advanced	C1	Advanced	C1	Advanced	C1	Advanced	C1	Advanced
A1	Basic	A1	Basic	A1	Basic	A1	Basic	A1	Basic

(*)European level: [Common European Framework of Reference \(CEF\) level](#)

IT-competences and skills

- MATLAB, MySQL, Python (numpy, pandas, matplotlib, scipy), Java for Android
 - Adobe Illustrator, Microsoft Office

Social skills and competences

- Fast settling-in period with new programs, projects and colleagues
 - Able to work in team: splitting of tasks, motivating colleagues, creating attention
 - Planning in advance: organising appointments, schedules, respecting deadlines
 - Punctual, flexible and dedicated.

Publications

Decoding of grasping tasks from intraneural recordings in trans-radial amputee.
M Cracchiolo, G Valle, F Petrini, I Strauss, G Granata, T Stieglitz, P M Rossini, S Raspopovic, A Mazzoni and S Micera. March 2020, Journal of Neural Engineering. doi.org/10.1088/1741-2552/ab8277

Quantitative estimation of nerve fiber engagement by vagus nerve stimulation using physiological markers.
 YC Chang, **M Cracchiolo**, U Ahmed, A Gabalski, A Daytz, L Reith, L Becker, T Datta-Chaudhuri, Y Al-Abed, TP Zanos, S Zanos. Brain Stimulation, December 2020. 10.1016/j.brs.2020.09.002

Decoding neural metabolic markers from the carotid sinus nerve in a type 2 diabetes model.
M Cracchiolo, JF Sacramento, A Mazzoni, A Panarese, J Carpaneto, SV Conde and S Micera. September 2019, TNSRE. 10.1109/TNSRE.2019.2942398

Anodal block permits directional vagus nerve stimulation.
 U Ahmed, YC Chang, **M Cracchiolo**, MFLopez, JN Tomaiolo, T Datta-Chaudhuri, TP Zanos, L Rieth, Y Al-Abed, S Zanos. June 2020, Scientific Reports. https://doi.org/10.1038/s41598-020-66332-y

An impedance matching algorithm for common-mode interference removal in vagus nerve recordings.
 T Levy, U Ahmed, T Tsaava, YC Chang, PJ Lorraine, J Tomaiolo, **M Cracchiolo**, M Lopez, T Datta-Chaudhuri, L Rieth, S Zanos, T Zanos. Journal of Neuroscience Methods. October 2019. https://doi.org/10.1016/j.jneumeth.2019.108467

Simultaneous decoding of cardiovascular and respiratory functional changes from pig intraneural vagus nerve signals.

F Vallone, MM Ottaviani, F Dedola, A Cutrone, S Romeni, A Macrì Panarese, F Bernini, **M Cracchiolo**, K Gabisonia, N Gorgodze, A Mazzoni, FA Recchia, S Micera. *bioRxiv*. January 2020. <https://doi.org/10.1101/2020.06.01.127050>

High frequency shift in Carotid Sinus Nerve and Sympathetic Nerve activity in Type 2 Diabetic Rat Model.

M Cracchiolo, JF Sacramento, A Mazzoni, A Panarese, J Carpaneto, SV Conde and S Micera. *NER 2019, San Francisco, CA, USA*, March 2019. 10.1109/NER.2019.8717052

A Robotic System for Adaptive Training and Function Assessment of Forelimb Retraction in Mice.

M Pasquini, S Lai, C Spalletti, **M Cracchiolo**, S Conti, A Panarese, M Caleo, S Micera. September 2018, TNSRE.10.1109/TNSRE.2018.2864279

Patent

21/12/2017. A system to monitor and treat metabolic disorders (Request 102017000148492). Scuola Superiore Sant'Anna, Galvani Bioelectronics Limited and Università di Lisbona – NOVA Medical School. Status: active.

Conferences

Oct 2019. I-RIM, Rome

Mar 2019. IEEE EMBS NER, San Francisco, CA, USA (Speaker)

Nov 2018. Society for Neuroscience, San Diego, CA, USA

Jun 2018. Bioelectronic Medicine, Stockholm

Jun 2018. The 6th GNB, Milan

Nov 2016. Society for Neuroscience, San Diego, CA