



# Mario Lavanga

TNG - INSTITUT DE NEUROSCIENCES DES SYSTÈMES: Mario Lavanga  
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## EDUCATION

### KU LEUVEN

PHD IN ELECTRICAL ENGINEERING  
Grad. September 2020 | Leuven, Belgium | Phd Graduation Video

### POLITECNICO DI MILANO

MS IN BIOMEDICAL ENGINEERING  
Grad. December 2015 | Milan, Italy | Final Grade: 100/100 cum laude




### BS IN BIOMEDICAL ENGINEERING

Grad. December 2015 | Milan, Italy | Final Grade: 100/100 cum laude

### ALTA SCUOLA POLITECNICA

DOUBLE DEGREE PROGRAMME WITH POLITECNICO DI TORINO  
Grad. December 2015 | Turin, Italy | Final Grade: Excellent

## LINKS

 Mario Lavanga  
 @Mario\_Lavanga  
 Mario Lavanga

## ACADEMIC COURSES

### PHD

Graph Theory  
Support Vector Machines  
Network Physiology

### MASTER OF SCIENCE

Biomedical Signal Processing  
Nonlinear dynamics  
System identification and Data Analysis  
Neuroengineering

## SKILLS

### PROGRAMMING

Matlab • Python • Jupyter • Git •  $\LaTeX$  • Shell • Slurm • C • R • HTML • Labview

### GRAPHICS

Inkscape

### LANGUAGES

Italian | Mother tongue • English | Fluent • French | Intermediate Knowledge • Dutch | Basic Knowledge

## ABOUT ME

Strong interest and background in Biomedical Signal Processing and Computational Neuroscience. I have developed a passion for mental health and aging. I enjoy programming, especially for data science. Although I am Matlab native, I regularly speak Python for open science purposes. I love running and I love travelling in Asia.

## RESEARCH

### BIOMED GROUP - STADIUS | PHD FELLOW

Jan 2016 – Present | Leuven, Belgium

I collaborated with Prof. Sabine Van Huffel and Prof. Gunnar Naulears to develop a Perinatal Stress Calculator. The goal of this research focused on a data-driven stress quantification in premature babies based on polysomnography data. Project in collaboration with UZ Leuven.

### TNG - INS | POSTDOCTORAL RESEARCHER

Oct 2020 – Present | Marseille, France

I collaborate with Prof. Viktor Jirsa and Prof. Svenja Caspers to investigate ageing in the last period life and simulate the brain functional activity based on the associated anatomical data. The project is part of the and the output pipeline will be available on EBRAINS.

## EXPERIENCE

### KU LEUVEN PHD FELLOW AT ESAT DEPARTEMENT, STADIUS GROUP

January 2016 – January 2017 | Leuven, Belgium

### FWO SB PHD FELLOW AT ESAT DEPARTEMENT, STADIUS GROUP

January 2017 – September 2020 | Leuven, Belgium

### AIX MARSEILLE UNIVERSITÉ POSTDOCTORAL RESEARCHER AT INS

October 2020 – Present | Marseille, France

## MAIN PUBLICATIONS

- M. Lavanga , J. Stumme, B.H. Yalcinkaya, J. Fousek, C. Jockwitz, H. Sheheitli, N. Bittner, M. Hashemi, S. Petkoski, S. Caspers, V. Jirsa, The virtual aging brain: a model-driven explanation for cognitive decline in older subjects. *bioRxiv* , 2022.
- M. Lavanga , B. Bollen, K. Jansen, E. Ortibus, S. Van Huffel, G. Naulaers, A. Caicedo, "The effect of early procedural pain in preterm infants on the maturation of EEG and heart rate variability." *Pain* , vol. 162, no. 5, May 2021.
- M. Lavanga , B. Bollen, K. Jansen, E. Ortibus, S. Van Huffel, G. Naulaers, A. Caicedo, "A bradycardia-based stress calculator for the neonatal intensive care unit: a multisystem approach." *Frontiers in Physiology* , vol. 11, June 2020.

The complete list of publications can be found at this link and on my Google Scholar account

## AWARDS AND VARIA

- 2021: Guest editor on neonatal care for the journal *Frontiers in Network Physiology*. Chief Editor is Prof. Plamen Ch. Ivanov.
- 2019: Participant of Falling Walls Lab Leuven - 2019
- 2018: Laureate of KU Leuven - LRD Technology Transfer Course for the best exploitation plan of research
- 2016: Recipient of the Strategic Basic Research Fellowship by the Flemish FWO