



Francesca Peveri

Indirizzo:

Indirizzo e-mail:

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Numero di telefono:

Sesso: **Data di nascita:** 15/07/1996 **Nazionalità:**

ESPERIENZA LAVORATI- VA

[01/11/2020 – Attuale] **PhD Student**

University of Genoa

Città: Genova

Paese: Italia

Principali attività e responsabilità:

PhD in Neuroengineering.

Project Title: "Continuous active interchange of perception: a new motor perspective for perceptual learning".

I perform research and teaching support activities.

[06/2019 – 01/2020] **Head waiter/head waitress**

Ristorante "2F"

Città: Genova

Paese: Italia

ISTRUZIONE E FORMA- ZIONE

[2010 – 2015] **Diploma from scientific high school**

Scientific High Angelico Aprosio <http://www.liceoaprosio.it/>

Indirizzo: Via Don Bruno Corti, 7, 18039, Ventimiglia, Italia

[09/2015 – 12/2018] **Bachelor's degree in Biomedical Engineering**

University of Genoa <https://www.dibris.unige.it/>

Indirizzo: Via All'Opera Pia, 15, 16145, Genova, Italia

Voto finale: 105/110

Tesi: Experimental sessions for the assessment of attention in Immersive Virtual Reality.

[09/2018 – 12/2020] **Master 's degree in Bioengineering**

University of Genoa <https://www.dibris.unige.it/>

Indirizzo: Via All'Opera Pia, 15, 16145, Genova, Italia

Voto finale: 110/110 cum Laude

Tesi: Cortical - like motion detectors based on neuromorphic spiking networks.

PUBBLICAZIONI

[2021]

A Cortically-inspired Architecture for Event-based Visual Motion Processing: From Design Principles to Real-world Applications

https://openaccess.thecvf.com/content/CVPR2021W/EventVision/html/Peveri_A_Cortically-Inspired_Architecture_for_Event-Based_Visual_Motion_Processing_From_Design_CVPRW_2021_paper.html

Riferimento: IEEE Conf. Comput. Vis. Pattern Recog. Workshops (CVPRW)

Abstract

We developed and tested the architecture of a bio-inspired Spiking Neural Network for motion estimation. The computation performed by the retina is emulated by the neuromorphic event-based image sensor DAVIS346 which constitutes the input of our network. We obtained neurons highly tuned to spatial frequency and orientation of the stimulus through a combination of feed-forward excitatory connections modeled as an elongated Gaussian kernel and recurrent inhibitory connections from two clusters of neurons within the same cortical layers. Sums over adjacent nodes weighted by time-variable synapses are used to attain Gabor-like spatio-temporal V1 receptive fields with selectivity to the stimulus' motion. In order to gain the invariance to the stimulus phase, the two polarities of the events provided by the neuromorphic sensor were exploited, which allowed us to build two pairs of quadrature filters from which we obtain Motion Energy detectors as described in [2]. Finally, a decoding stage allows us to compute optic flow from the Motion Detector layers. We tested the approach proposed with both synthetic and natural stimuli.

COMPETENZE DIGITALI

C++

Development

MATLAB | Arduino IDE | C# | Python | UNITY | C | Android Development Tools (ADT), Android SDK tools, Android Platform

CAD

Autodesk Fusion360

Software

shader OpenGL | PsychoPy | Psychtoolbox | Utilizzo della libreria OpenCV orientata al computer vision

COMPETENZE LINGUISTICHE

Lingua madre: italiano

Altre lingue:

inglese

ASCOLTO C1 LETTURA C1 SCRITTURA C1

PRODUZIONE ORALE C1 INTERAZIONE ORALE C1

francese

ASCOLTO A1 LETTURA A1 SCRITTURA A1

PRODUZIONE ORALE A1 INTERAZIONE ORALE A1

CONFERENZE E SEMI-NARI

[06/2021] **CVPR 2021 Workshop on Event-based Vision** Virtual

Third International Workshop on Event-Based Vision. Workshop dedicated to event-based cameras, smart cameras, and algorithms processing data from these sensors.

<https://tub-rip.github.io/eventvision2021/>

PATENTE DI GUIDA

Motocicletta: AM

Automobile: B

Autorizzo il trattamento dei miei dati personali presenti nel CV ai sensi dell'art. 13 d. lgs. 30 giugno 2003 n. 196 - "Codice in materia di protezione dei dati personali" e dell'art. 13 GDPR 679/16 - "Regolamento europeo sulla protezione dei dati personali".