GIACOMO FANTONI

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I am an energetic and highly motivated person. I was able to develop a strict and reactive approach to achieve objective on time and with excellence. My primary interests are in the field of Computational Biology, in particular Computational Neuroscience. I have developed great communication and leadership skills thanks to the several group project, both personal and done during my Master and Bachelor studies.

EDUCATION

Università degli studi di Trento Trento, Italy
Master of Quantitative and Computational Biology Sept. 2021 - Present

- Relevant coursework: Bioinformatics, Data mining, Mathematical Modeling, Computational Biophysics, Function and plasticity of the Central Nervous System.

Università degli studi di Trento Trento, Italy
Bachelor of Computer Science Sept. 2018 - Sept. 2021
BA Thesis: "Analysis of trascriptomic RNA-seq data from polisomial and total fraction from an epithelial cancer cellular line". Supervisor: Prof. A. Inga. Final grade 108/110.

EXPERIENCE

Università degli studi di Trento, Department of CIBIO March 2021 - August 2021
Analysis of trascriptomic RNA-seq data *Trento, Italy*

- Implemented a pipeline to process RNA-seq data on a remote server.
- Analysed processed data using a combination of R and python to gain biological insights regarding their involvement in cancer.
- The work is accessible at https://github.com/giacThePhantom/Tesi

Università degli studi di Trento, Department of CIMEC March 2023 - Present
Computational modelling and simulation of the antennal lobe of the Honey Bee to uncover neuronal correlates of sleep *Rovereto, Italy*

- Implemented a gpu-accelerated computational model of the antennal lobe in python.
- The work is accessible at https://github.com/giacThePhantom/genn-network-model

PROJECTS

Personal coursework collection I have written in LaTeX all the material regarding the content of my university courses, making it accessible at https://github.com/giacThePhantom. This has provided easily accessible quality material for my colleagues and it has encouraged some people to join this project, creating a small community of maintainers.

Smith Waterman implementation I have implemented in python a version of the alignment algorithm by Smith-Waterman available at https://github.com/giacThePhantom/smith-waterman.

Identification and validation of a vitamin D-related prognostic signature in colorectal cancer A group project dealing with biological cancer data implemented in R. We implemented a normalization procedure to avoid batch effects in microarray data and performed a Cox proportional hazard regression model to them. Source code is available at: https://github.com/giacThePhantom/BioDataMining.

Implementation of the Morris-Lecar neuron model A group project dealing with neuron dynamics implemented in Matlab. The code models the dynamics of a neuron using an hybrid stochastic model in which the membrane potential evolves according to a deterministic differential equation and the opening and closing of ion channels are modelled as a stochastic process. Source code is available at: https://github.com/giacThePhantom/mathematical-modeling-and-simulation-project.

SKILLS

Programming:	Python (numpy, pandas, scikit-learn, pytorch), R, C/C++, Java, bash, Matlab, Javascript, Linux systems, Git, LaTeX
Languages:	Fluent in Italian and English