

GIULIA CROCIONI

Big Data Scientist @ Allianz S.p.a.

Biomedical Engineer highly passionate about using Big Data to support decision making in fast growing fields, with a special interest on healthcare.

WORK EXPERIENCE

Big Data Scientist @ Allianz S.p.a

Jan. 2020 – Ongoing Milan, Italy

Enrolled in Allianz Talent Program in Big Data Science. Currently developing Machine Learning models to drive insurance pricing strategies. I deal with data extraction, data analytics, and model development.

Research Intern @ STMicroelectronics

Sept. 2019 – Dec. 2019 Agrade Brianza, Italy

Research & Development in Artificial Intelligence Tools and Application division. Time series predictive modeling through Deep Learning algorithms, and Neural Networks embedding on IoT (STM32) and automotive-grade (SPC58) microcontrollers.

IEEE Italy Section website Admin @ IEEE Italy

Jul. 2017 – Jul. 2019 Milan, Italy

Maintenance of the website contents and functionalities (e.g. newsletter updates).

Teaching Assistant @ University of Illinois at Chicago

Jan. 2019 – May 2019 Chicago, IL, US

Teaching Assistant in *Neural Engineering - Introduction to Hybrid Neural Systems*. Supporting students in the development of conditioning circuits for biomedical signals acquisition, and making use of LabVIEW for digital preprocessing and data visualization.

EDUCATION

Second Level Master Degree @ Cefriel

Jan. 2020 – Ongoing Milan, Italy

Data-driven decision making, and data science for business innovation. Structured, unstructured, and continuous data ingestion. Data preparation for different data loads (SQL, python, pyspark, kafka), and data quality (e.g. missing values, rebalancing, ...).

M.Sc. in Biomedical Engineering @ Politecnico di Milano

Sept. 2017 – Oct. 2019 Milan, Italy

Specialization in Biomedical Technologies for Electronics. Thesis: "Analysis, Design and Testing of a Configurable Full-Field Stimulus Source for Electroretinography". Improvement of electronic design, and further device testing. Grade: 110/110 cum laude

M.Sc. in Bioengineering @ University of Illinois at Chicago

Jan. 2018 – Aug. 2019 Chicago, IL, US

Thesis: "Design, Fabrication and Testing of a Configurable Full-Field Stimulus Source for Electroretinography". Mechanical and electronic design of the stimulus source, and assembling and testing of the prototype. Grade Point Average (GPA): 4.0/4.0

B.Sc. in Biomedical Engineering @ Politecnico di Milano

Oct. 2014 – Jul. 2017 Milan, Italy

Thesis: "Implementation of an IoT node for biomedical devices". Implementation of an IoT node for clinical data collection and atrial fibrillation detection through electrocardiogram analysis, using Machine Learning clustering. Grade: 110/110 cum laude

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in linkedin.com/in/giulia-crocioni/

📍 Milano, Italy

SKILLS

Excellent team working skills, with strong propensity for team leading.

Programming

Python

Matlab

LaTeX

SQL

Software & Tools

Data handling – SciPy, Pandas, PySpark

Data modeling – SciKit-Learn, XGBoost, Keras, TensorFlow

Visualization – Matplotlib, Seaborn, Plotly

Notebooks – Jupyter, Apache Zeppelin

Code Editors – Visual Studio Code

CAD Software Tools – SolidWorks, KiCad

LabVIEW

Microsoft Office

Languages

Italian

English (TOEFL - C1)



CERTIFICATES

AI Privacy and Convenience

Exploration of fundamental concepts involved in security, privacy and ethics of machine learning projects, and how that affects user privacy and transparency. *Wished by Coursera, Dec. 2020.*

Python Classes and Inheritance

Authorized by the University of Michigan, and Issued by Coursera, Dec. 2020.

Graduation to Professional Industrial Engineer (Italian legislation)

Politecnico di Milano, Sept. 2020.

IBM AI Engineering, Specialization

Scalable Machine Learning on Big Data using Apache Spark, Deep Learning & Neural Networks with Keras, PyTorch and TensorFlow, AI Capstone Project with Deep Learning. *Issued by Coursera, Jun. 2020.*

PUBLICATIONS

Conference Proceedings

“Li-Ion Batteries Releasable Capacity Estimation with Neural Networks on Intelligent IoT Microcontrollers”

Comparison of different Machine Learning algorithms for Lithium-Ion batteries releasable capacity estimation analysing accuracy versus complexity, with special focus on Artificial Neural Networks, and resource constrained microcontrollers.

 G. Crocioni, D. Pau, G. Gruosso  Jun. 2020
 IEEE 20th Mediterranean Electrotechnical Conference (MELECON), Palermo, Italy




“A Highly-Configurable Full-Field Stimulus Source for Electroretinography”

A highly-configurable full-field stimulus source for electroretinography based on LEDs, capable of presenting an arbitrary pattern of pixels to the entire visual field of a test subject. Aimed at bringing together the functionalities of the existing stimulators.

 G. Crocioni, G. Gruosso, J. Hetling  Jun. 2020
 IEEE 20th Mediterranean Electrotechnical Conference (MELECON), Palermo, Italy




“GLOS: Glove for Speech recognition”

A low-cost, non-invasive and wearable device that will allow the deafblind individuals to comprehend speeches in real-time. The speech recorded from a microphone is processed by the board and encoded into 5 haptic vibrating modules attached to a glove.

 G. Crocioni, C. Di Vece, H. Esmailbigi  Jul. 2019
 41st Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC), Berlin, Germany

“Implementation of an IoT Node for Biomedical Applications”




Implementation of an IoT node to collect clinical data and to detect atrial fibrillation through the analysis of electrocardiogram, and device validation on a sample of patients affected by atrial fibrillation and other heart diseases.

 S. B. Bonfanti, G. Crocioni, et al.  Sept. 2018
 IEEE 4th International Forum on Research and Technology for Society and Industry (RTSI), Palermo, Italy

Journal Articles

“Li-Ion Batteries Parameter Estimation With Tiny Neural Networks Embedded on Intelligent IoT Microcontrollers”

Addition of Gated Recurrent Unit networks to the comparative analysis. Quantization of Neural Networks via STM32Cube.AI to decrease models size with minimal accuracy loss, and performances comparison with TensorFlow Lite for Microcontrollers.

 G. Crocioni, D. Pau, J. Delorme, G. Gruosso  Jul. 2020
 IEEE Access, vol. 8, pp. 122135-122146

Under Review

“Characterization of Neural Networks Automatically Mapped on Automotive-grade Microcontrollers”

 G. Crocioni, D. Pau, et al.  Submitted

ACTIVITIES

Smarter Engineering For Industry 4.0: 3rd IEEE Italy Section Summer School

Training on topics related to Industry 4.0, such as human-machine interfaces, and telemedicine.

Department of Engineering - University of Perugia, Sept. 2017.

Xilinx PYNQ Hackathon

Competition aimed at developing ideas on the PYNQ platform, choosing applications related to the biomedical field. My project was about snore and breathing interruption identification in subjects suffering from obstructive sleep apnea.

NECST Lab, Politecnico di Milano, Jul. 2016.

HOBBIES

Aerial Dancing

After 15 years of ballet, modern, hip hop and contemporary dancing, in the last few years I have become passionate about aerial disciplines.

Piano

I love playing the piano since I was a child, and I attended the first two years of music conservatory.

REFEREES

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Prof. John R. Hetling

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Danilo Pau

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