Paul Melki

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Education

University of Bordeaux – *Bordeaux, France*
since Mar. 2022
Ph.D. CIFRE, Machine Intelligence & Perception
Focus: *Robust Deep Learning, Computer Perception*

Toulouse School of Economics – *Toulouse, France*
Sep. 2019 - Sep. 2021
M.S., Applied Mathematics (Statistics & Econometrics)
Focus: *Machine Learning, Optimization, Spatial Econometrics & Statistics*
Graduated with Honours, *Cum Laude*, 15.8/20

University of Balamand – *Al-Koura, Lebanon*
Aug. 2016 - Aug. 2019
B.S., Computer Science (Software Engineering),
Minor, Economics
Graduated with Highest Distinction, *Summa Cum Laude*, 92/100

Professional Experience

EXXACT Robotics – *Épernay, France*
IMS Laboratory (CNRS UMR 5218) – *Bordeaux, France*
since Apr. 2021
R&D Data Scientist
Researcher, Signal and Image Processing Group

Investigating statistical and probabilistic methods for the development of more robust, adaptive and interpretable computer vision methods, specifically in the contexts of remote and proximal sensing, and precision agriculture, under the academic supervision of Prof. Jean-Pierre Da Costa and Prof. Lionel Bombrun (IMS, CNRS, Bordeaux Sciences Agro) and industrial supervision of Hakim ElChaoui ElGhor, Ph.D. (Exxact Robotics).

BVA – *Toulouse, France*
Oct. 2020 - Mar. 2021
Academic Statistical Consultant

Modelling fraud behaviour on public transport systems via analysis of data in their socio-economic, spatial and temporal contexts; with a focus on the Paris and Ile-de-France system (RATP). Methodology proposed was adopted by BVA and RATP in production.
Teammates: Cylia Abbad, Anh-Dung Le, Aurélie Mercadié
Supervisors: Prof. Christine Thomas-Agnan (TSE), Thibaut Laurent (TSE), Lukas Dargel (TSE-BVA)

The Signal Group – *Athens, Greece* **(Remote)**
May 2020 - Jul. 2020
Shipping Intelligence Intern
Worked on a proof of concept for the optimization of Signal's predictive capabilities by extracting intelligence from geo-spatial, meteorological and nautical data, under direct supervision from Signal's VP of Data Science Engineering, Konstantinos Chatzimichalis (M.A., Oxford).

Publications

Melki, P., Bombrun, L., Millet, E., Diallo, B., ElChaoui ElGhor, H., and Da Costa, J.-P. (2022). "Exploratory Analysis on Pixelwise Image Segmentation Metrics with an Application in Proximal Sensing", *Remote Sensing*, 14(4), 996. DOI:10.3390/rs14040996

Teaching & Mentoring

CentraleSupélec / Latitudes
Mentor, 2022
Along with Camille Portes (PhD student, INRAE - University of Avignon) as volunteers in *Latitudes - Tech for Good* community, I am mentoring three students from CentraleSupélec in their contribution to the startup "Topinamour.com" founded by Mathilde Castagni to solve the problem of food waste. Working on solutions to optimization and operation research problems and software development in the back-end.

LinkPact / Pro-P Group
Tutor, "How to Tackle a Machine Learning Project", 2022

Department of Computer Science, University of Balamand
Lab Assistant, Introduction to Computer Programming (in Java), 2017-2018
Lab Assistant, Data Structures (in C++), 2018-2019

Awards & Fellowships

NASA SpaceApps Challenge 2021
First Place Winners (Lebanon), Global Nominees
Developed with four teammates "UrbanWatch", a website that fuses NASA satellite data with data from homemade drone in order to provide intelligence for more sustainable and efficient urban plans. Press article: lorientlejour.com/article/1287401

Faculty of Arts & Sciences, University of Balamand
Faculty of Sciences Professors Award, 2019
Awarded during the Commencement Ceremony for excellence in performance and highest GPA among the Department of Computer Science graduates.

Faculty of Arts & Sciences, University of Balamand
Dean's Honor List, All semesters from 2016 to 2019

Languages & Skills

English (proficient), French (proficient), Arabic (native), Greek (beginner)
Python, R, LaTeX, Java, JavaScript, C/C++, STATA
TensorFlow, Keras, PyTorch, OpenCV, Spark, QGIS