# 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, uncertainty quantification, machine 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 Boubacar Diallo, 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 mentored 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