ARNAU VILELLA

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EDUCATION

PhD student in Electronic and Computer Engineering 2024 - 2028
The Hong Kong University of Science and Technology (HKUST) *Hong Kong, China*
Research on machine learning, convex optimization and financial engineering under the supervision of Daniel P. Palomar

Bachelor's Degree in Mathematics 2019 - 2024
Universitat Politècnica de Catalunya (UPC-CFIS) *Barcelona, Spain*

Bachelor's Degree in Data Science and Engineering 2019 - 2024
Universitat Politècnica de Catalunya (UPC-CFIS) *Barcelona, Spain*

PERVIOUS POSITIONS

Visiting Researcher Aug 2025 - Sep 2025
TU Darmstadt - with Michael Muma and Jasin Machkour on variable selection with FDR control *Darmstadt, Germany*

Visiting Researcher Sep 2023 - May 2024
HKUST - with Daniel P. Palomar on generative AI in finance *Hong Kong, China*

Quantitative Strategist Intern Jun 2022 - Sep 2022
Goldman Sachs - development of fixed income portfolio optimization algorithms *London, United Kingdom*

Machine Learning Engineer Intern Jul 2021 - Sep 2021
HP Inc. - development of machine learning models for durability prediction *Sant Cugat, Spain*

Visiting Researcher Jul 2018
Canarian Institute of Astrophysics - development of asteroid detection algorithms *Tenerife, Spain*

PROFESSIONAL ACTIVITIES

Industrial Collaboration Feb 2023 - Jun 2023
Mediapro - developement of machine learning for basketball highlights generation *Barcelona, Spain*

Spring Week Apr 2022
G-Research - spring into quantitative finance *London, UK*

PUBLICATIONS

Learning False Discovery Rate Control via Model-Based Neural Networks Sep 2025
Arnau Vilella, Jasin Machkour, Michael Muma, Daniel P. Palomar *ICASSP 2026 (under review)*

Generation of Stochastic Time Series via Deep Learning May 2024
Arnau Vilella (supervised by Daniel P. Palomar) *B.Sc. Thesis*

HONORS & AWARDS

Hong Kong PhD Fellowship Scheme 2024 - Present

CFIS Scholarship 2019 - 2024

CiMs-CELLEX Scholarship 2017 - 2019

TEACHING

Convex Optimization (HKUST ELEC - 5470), TA Fall 2025

Data-Driven Portfolio Optimization (HKUST ELEC/IEDA - 3180), TA Spring 2025

SKILLS

Programming skills	Python (NumPy, Pandas, PyTorch, SciPy), R, C++, SQL, Spark, Matlab
Languages	Spanish, Catalan, English