





# Victor Fernando Lopes de Souza

Engineering Student at CentraleSupélec

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## About Me

Passionate for innovation and technology. Interested in approaching complex problems and grasping complex concepts. Enthusiast of Mathematics, Computing, Artificial Intelligence, Machine Learning, System Modeling and Control, Philosophy, Quantum Physics, Financial Markets, Cybersecurity, Blockchain and Discrete Automation.

## Skills

Multiple experiences on Python,  $\text{\LaTeX}$ , Matlab, Simulink, Linux, Git, R, Ladder, Java, C++, AutoIt and BASIC.

Experience on Web developing using PHP, HTML, CSS, SQL and JavaScript.

Experience on data analysis and neural nets using Pandas, Numpy, Tensorflow and Keras.

Good Mathematical Background and knowledge in Control's Systems, Automata and Discrete-Event's Systems.

Languages: Portuguese (mother tongue), English, French and Spanish.

## Education

2022-2023	Université Paris-Saclay Master in Systems, Signals and Image Processing	Gif-Sur-Yvette (FR)
2021-2023	CentraleSupélec Engineering, with mention in Control	Gif-Sur-Yvette (FR)
2018-2023	UFSC - Universidade Federal de Santa Catarina Control and Automation Engineering PAM - Advanced Mathematics Program	Florianópolis (BR)
2021-2022	Paris IV - Sorbonne Université Bachelor's degree in Philosophy	Paris (FR)
2014-2017	IFSC - Instituto Federal de Santa Catarina Engineering Technician in Electronics	Florianópolis (BR)

## Work Experience

2020-2021	Student Researcher in Neural Nets <i>at EMBRAPPII, in partnership with Central Energia (R&amp;D on trading)</i> Worked on building, training, and evaluating LSTM networks regarding the prediction of precipitation data for energy trading	Florianópolis (BR)
2018-2021	Student Researcher in Algebraic Topology <i>at IMPA (Brazilian Institute of Pure and Applied Mathematics)</i> Research on advanced topics related to Geometric Group Theory	Florianópolis (BR)
2018-2019	Calculus Teaching Assistant <i>at the Mathematics Department, UFSC</i> Developed PHP, Shell, BASIC and Kernel scripts to automate tasks related to the management, monitoring and control of the backbone	Florianópolis (BR)
2016-2017	Intern as Web Developer <i>at Oi S.A. (third largest telecommunication company in Latin America)</i> Developed PHP, Shell, BASIC and Kernel scripts to automate tasks related to the management, monitoring and control of the backbone	Florianópolis (BR)

## Projects

2022	Training Neural Networks with Kalman Filters Implementation of modern control methods for training Neural Nets and use of the Kalman filter as an optimization algorithm	Gif-Sur-Yvette (FR)
2022	Exploring portfolio optimization methods, with BNP Construction, Implementation and Evaluation of different portfolio allocation methods	Gif-Sur-Yvette (FR)
2022	System for inform on cancer, with Health Guide AI Testing of different recommendation algorithms for this purpose	Gif-Sur-Yvette (FR)
2021-2022	Neural Nets: Attacks and Robustness, with SystemX Study and implementation of some attack methods on NN systems	Gif-Sur-Yvette (FR)

## Honours and Awards

2021	BRAFITEC, Merit Scholarship for Double Degree in France
2019	Qualified to Final Phase, OBMU (National University Maths Olympiad)
2018	Freshman Award, OEI (Organization of Ibero-American States)
2017	Silver Medal, OBMEP (National High School Mathematics Olympiad)
2016	Silver Medal, OBMEP (National High School Mathematics Olympiad)
2014	Honourable Mention, OBMEP (National High School Maths Olympiad)