# Nicolas MAGNE TANG

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Portfolio | https://nicolas.magnetang.com
Battery Storage Systems Engineer
6 years of experiences

## Professional Experience

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| *Segula Technologies Automobile* | *Paris, France* |
| **System Engineer – Mission: PFS: GTR-EVE Battery** | **01.2024 – Present** |

- Battery BMS optimization, electrical architecture design, battery testing, and testing campaigns
- Current Mission: Pilote Function System, Leading validation and test planning under GTR EVE regulations, defining SOCE/SCR estimation for various chemistries for EV / PHEV based on WLTP 23/-7C

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| *Freelancer Project (NDA)* | *Geneva, Switzerland* |
| **Algorithm Battery Developer Engineer – BMS – Freelancer** | **08.2023 – 10.2023** |

- Designed of a scalable and modular BMS software/hardware architecture using MBSE methods.
- Developed algorithms for integrating battery state estimators, incorporating vital parameters such as State of Charge (SoC) and State of Health (SoH) from sensor data.

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| *Laboratory of Electrochemistry LEPMI (Grenoble INP)* | *Grenoble, France* |
| ***R&D Engineer – Li-ion Battery Modelling – Researcher*** | ***11.2019 – 04.2023*** |

- Defined protocols and led testing campaigns for NMC and LFP battery types, incorporating the innovative ohmic drop compensation (ODC) method and ageing analysis through cycling tests, assessing the impact of ODC on NMC cell performance after 200 cycles, and engineered a fast protocol, resulting in a 20% improvement in capacity extraction during battery discharges.
- Designed and implemented a parametrical model using ODC, comparing it to the Electrical Equivalent Circuit (ECM) model, and integrated systems into small-scale applications like drones and e-bikes.
- Published two scientific articles and secured an industrial patent focusing on rapid battery diagnostics.

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| ***Development Engineer – Second life battery Analysis - Technical Intern*** | ***02.2019 – 0.7.2019*** |

- Developed protocols for characterizing Li-ion batteries, focusing on understanding degradation mechanisms.
- Applied equivalent-electrical circuit performance-degradation modeling to analyze and predict battery performance. (2 models, 500 experiments)

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| *Laboratory of Fluid Mechanics and UAV* | *Barcelona, Spain* |
| **R&D Engineer - Energy Management Optimization – Technical Intern** | **07.2018 – 09.2018** |

- Analyzed consumption and energy efficiency of fixed-wing drones, with a focus on battery technologies.
- Developed expertise in assessing energy consumption for standalone and hybrid fixed-wing drone systems, optimizing overall energy efficiency.

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| *Centrales Villageoises (Collective PV production)* | *Vercors, France* |
| **Engineer of Project Industrial - Electrical analysis – Technical Intern** | **02.2018 – 06.2018** |

- Technical-economic study of the collective photovoltaic energy production of a country community.
- Performance improvements, followed by comprehensive financial analysis (Project invest €175.000) and, analysis of community energy consumption patterns, identifying opportunities for cost savings.

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| *Mi Bus UIO (Start-up)* | *Quito, Ecuador* |
| **Electronic Engineer – Instrumentation and Automatization control** | **06.2015 – 02.2018** |

- Designed and implemented a pioneering people counting system for 120 buses, utilizing advanced sensors and algorithms
- Conducted thorough testing and troubleshooting to enhance system reliability, optimize bus routes, and reduce operational costs by $50,000 annually.

## Education

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| **PhD. Energy, Process and Fluid Mechanics (BESS)** | **Grenoble, France** |
| *University Grenoble Alpes* | *2019 - 2022* |
| **Master Electrical Smart Grids and Buildings** | **Grenoble, France** |
| *ENSE3 (École Nationale Supérieure d'Énergie, Eau et Environnement)* | *2017 - 2019* |
| **Engineer in Electronics, automatization, and industrial control** | **Quito, Ecuador** |
| *National Polytechnic School* | *2009 - 2015* |

## Language and Key Competences

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| **English:** Advanced C1 | **French:** Intermediate B1 | **Spanish:** Native |

***Software and Programing:*** MS Office, MATLAB, Simulink, COMSOL Multiphysics, AutoCAD, LabVIEW, EC-Lab Biologic, PVSyst, PSIM, SEE Electrical, Python, DDT2000, C/C++,.

**Key Competences:** Electrical/Electronic Design, Smart Grids, Simulation and Modelling, BMS analysis, Energy System Analysis, Hardware Integration and IoT, Model-Based System Engineering, Project Management