

EMMANUEL ANIOS FILS MOMPREMIER

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EDUCATION

KTH Royal Institute of Technology, Stockholm, Sweden

Graduation date: **July 2023**

Université de Lorraine, Nancy, France

Degree: **Joint Master in Decentralized Smart Energy Systems**

GPA: 4.0 / 4.0

Achievements & Awards: Erasmus Mundus Scholarship (2021 - 2023)

Relevant Coursework: AI for Energy Systems, Co-Simulation, Distributed Control, Networking and IoT, Systems Engineering

National Taiwan University, Taipei, Taiwan

July 2021

Degree: **Bachelor of Science in Mechanical Engineering**

GPA: 3.85 / 4.3

Achievements & Awards: MOFA Taiwan Scholarship (2017 - 2021), Academic Achievement Award (top 5% of class, 2021)

Relevant Coursework: Computer Programming, Automatic Control, Machine Design, Computer-Aided Design, FEA, Economics

WORK EXPERIENCE

Laboratoire Lorrain de Recherche en Informatique et ses Applications, LORIA, Nancy, France

July 2022 – Aug 2022

Co-Simulation Summer Intern

- Updated the modeling of an Electric Vehicle powered by FC and SC by adding rigorous physical constraints
- Wrote 500+ lines of code to integrate trajectory, physics of the engine and a driver-like behavior into the EV simulation
- Co-simulated the subsystems developed in OpenModelica using Python to find the variation of the SCs' SOC with time

Advanced Skills: Software Engineering, Python, Modelica, Algorithms, FMI/FMU, Modeling of EV, Research

First Code Academy, Taipei, Taiwan

June 2021 – Aug 2021

STEM and Coding Instructor

- Led online coding bootcamps for 30+ students aged 7 to 15 delivering engaging study materials to boost coding interest
- Guided students to create personal projects and provided their parents with prompt feedback on the learning progress
- Covered topics included Python, HTML, CSS, Roblox Studio (Lua), MIT App Inventor and Scratch

Advanced Skills: Programming, Teaching, Communication, Teamwork, Time Management, Adaptability

Industrial Technology Research Institute (ITRI), Hsinchu, Taiwan

Jan 2019 – May 2019

International Marketing & Communication Intern

- Edited, proofread, and reviewed ITRI's annual technical report and quarterly newsletters on ongoing research projects
- Conducted user market research and authored publications to increase international outreach and company recognition

Advanced Skills: Technical Writing & Presenting, Expert Interviews, Research, Team Collaboration

PROJECTS

EV Charging Station Controller (*Skills: Python, Pyomo, Optimization, MILP*) - [Portfolio](#)

- Built a MILP Optimization using Python, Pyomo and CBC solver to devise a strategy for efficient charging of an EV pool
- Designed a controller accounting for EVs' SOC and station's power flow constraints to obtain top accuracy of 98.48%

Energy+ (*Skills: Python, Tkinter, Numpy, Pandas, Matplotlib, Data Analysis*) - [Portfolio](#)

- Programmed an energy management app that reduces residential consumption by 30% through behavioral design
- App created using Python and Tkinter by leveraging OpenWeatherMap APIs and third-party structured data

Propeller-Driven Autonomous Robot Car (*Skills: Programming, Automatic Control, CAD Design*)

- Led a team of 5 to build a propeller-driven car with autonomous ability of line tracing and obstacle avoidance
- Budgeted under €100 to design and implement the sensor-integrated control system using Arduino (C Programming)
- Achieved a 10% lower than average robot car body weight and reached target speeds at the final relay

Point & Quantile PV Generation Forecasts (*Skills: Machine Learning, Data Modeling, Python, scikit-learn*) - [Portfolio](#)

- Developed ML models to forecast (point and quantile) PV generation of a plant from irradiance and temp. data
- Fine-tuned hyperparameters to boost accuracy and lower test set errors to under 10%
- Trained scikit-learn models include MLR, MLP, GBR and assessed quantitative metrics such as MAE, RMSE, and CRPS

LEADERSHIP

National Taiwan University (NTU) – Office of International Affairs (*Skills: Communication, Team Leadership*) **2019 – 2021**

- Coordinated and delivered student-led events, welcomed foreign delegations, and performed administrative tasks
- Managed a team of 3 to draft NTU's pioneer International Freshmen Student Handbook benefiting 1000+ students

SKILLS

Programming: Python (NumPy, Pandas, Pyomo, Tkinter, Scikit-learn, Matplotlib), MATLAB, ML/DL, Tensorflow, Keras
Modeling: MATLAB/Simulink, OpenModelica, 3D Design (Inventor), Abaqus (FEA)
Languages: Haitian-Creole (native), French (native), English (fluent), Mandarin (advanced), Spanish (advanced)
Certifications: Deep Learning Specialization (Coursera), Student Leadership in Renewable Energy (IRENA)