EMMANUEL ANIOS FILS MOMPREMIER

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EDUCATION

Master of Science in Decentralized Smart Energy Systems　　　　　　　　　　**Sep 2021 – July 2023**
- ✦ KTH Royal Institute of Technology (Sep 2022 – July 2023)　　　　　　　　　*Stockholm, Sweden*
- ✦ Université de Lorraine (Sep 2021 – July 2022)　　　　　　　　　　　　　　*Nancy, France*
- ✦ Recipient of Erasmus Mundus Scholarship (2021-2023)
- ✦ Relevant courses: AI for Energy Systems, Co-Simulation, Systems Engineering, Networking and IoT for Energy Monitoring

Bachelor of Science in Mechanical Engineering　　　　　　　　　　　　　**Sep 2017 – June 2021**
- ✦ National Taiwan University (GPA: 3.85)　　　　　　　　　　　　　　　　*Taipei, Taiwan*
- ✦ Recipient of MOFA Taiwan Scholarship (2017-2021), Dean's Academic Achievement Award (top 5% of class, 2021)
- ✦ Relevant Courses: Python Programming, Automatic Control, Computer-Aided Design CAD, Machine Design, FEA

WORK EXPERIENCE

First Code Academy　　　　　　　　　　　　　　　　　　　　　　　　　**June 2021 – Aug 2021**
STEM and Coding Instructor　　　　　　　　　　　　　　　　　　　　　　*Taipei, Taiwan*
- ✦ Led and instructed daily virtual summer camps for Hong Kong, Singapore and Vietnam students aged between 7 and 15
- ✦ Guided students to complete in-class projects and provided parents with prompt feedback on the progress
- ✦ Covered topic included Python, HTML, CSS, Roblox Studio (Lua), App Inventor and Scratch

Computational Flow Physics Lab of Prof. Hsieh-Chen Tsai　　　　　　　　　**Aug 2020 – Mar 2021**
Undergraduate Research Assistant　　　　　　　　　　　　　　　　　　　*Taipei, Taiwan*
- ✦ Contributed to convert sequential codes of an IBM-based fluid flow simulation model into parallel codes to improve efficiency
- ✦ Investigated the self-starting problem of vertical axis wind turbines using active pitch angle control

Industrial Technology Research Institute (ITRI)　　　　　　　　　　　　　**July 2019 – Aug 2019**
International Marketing & Communications Intern　　　　　　　　　　　　　*Hsinchu, Taiwan*
- ✦ Reviewed the Institute's annual technical report and quarterly newsletters
- ✦ Conducted user market research and edited publications to increase international outreach and company recognition

SKILLS & PROFILE

- ✦ **Computing:** Python, NumPy, Pandas, Matplotlib, Seaborn, scikit-learn, OpenCV, AI/ML/DL, tensorflow
- ✦ **Modelling:** MATLAB/Simulink, OpenModelica, 3D Design (Inventor), Finite Element Analysis (Abaqus), Arduino IDE
- ✦ **Certifications:** Neural Networks and Deep Learning (Deeplearning.ai), Student Leadership in Renewable Energy (IRENA)
- ✦ **Languages:** Haitian-Creole (native), French (native), English (fluent), Mandarin Chinese (advanced), Spanish (advanced)

RELEVANT PROJECTS

Operational Planning of an EV Charging System (Optimization, Mixed Integer Linear Programming, Electric Vehicle)　　**Mar 2022 – Apr 2022**
- ✦ Implemented a MILP Optimization using Python, Pyomo and cbc solver to devise a strategy for charging a pool of EVs
- ✦ Designed a control strategy accounting for EV's SOC and station's power flow constraints to obtain a 98.48% simulat· accuracy

Application of Machine Learning Technologies in the Renewable Energy Industry: A Case Study (Data Handling)　　**July 2021**
- ✦ Developed a Machine Learning program to forecast weather conditions and increase solar energy generation planning
- ✦ Trained Python' scikit-learn models such as LR, LDA, KNN, CART and NB and obtained an accuracy of 80.5% upon learning

Propeller-Driven Autonomous Car (Programming, Control, CAD Design)　　　　**Mar 2020 – June 2020**
- ✦ Led a team of 5 and built 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 body weight and reached target speeds at the final relay

Control of Segway Vehicle (Modelling, PD control, MATLAB　　　　　　　　**Sep 2019 – Jan 2020**
- ✦ Mathematically modeled and analyzed the system of a two-wheeled self-balancing electric vehicle (Segway)
- ✦ Designed a PD controller to stabilize the system using MATLAB

Computer Vision Project (OpenCV, Python)　　　　　　　　　　　　　　**Sep 2019 – Jan 2020**
- ✦ Used computer vision and image processing to understand methods for artificial perception and scene understanding
- ✦ Implemented programs to calibrate cameras and perform feature point, filtering, edge, fall detection using Python and OpenCV

LEADERSHIP

National Taiwan University (NTU) – Office of International Affairs　　　　　**Oct 2019 – June 2021**
- ✦ Assisted in coordinating and delivering events, receiving foreign delegations, and undertaking administrative tasks
- ✦ Managed a team of 3 to draft NTU's first International Freshmen Student Handbook benefiting 1000+ foreign students