Professional CV	SAMUEL GALEA
Key Qualifications:	First Class MEng in Mechanical Engineering, Lancaster University, 2016
Key Experience:	Having worked in the energy sector for several years, I have proven myself to be a reliable, determined, hard-working and adaptable Mechanical Engineer. I have worked on a variety of projects ranging from in-house optimisation exercises to multi-million pound construction projects. This has required excellent organisational skills, group work and individual commitment.
Achievements:	Shortlisted for "New Starter of The Year" award at Vital Energi. Worked on publishing an academic paper for a Triplex suspension set-up, with the help of a lecturer outside of university time. Associate Member of IMechE (AMIMechE) and actively working towards chartership by attending multiple CPD's, IMechE talks and organising factory visits. First place in a design challenge for IMechE, designing a small tug-boat. CSCS Black Card for Managers. Various Asbestos Awareness & GDPR Training Courses.

Suitably Qualified Experienced Personnel (SQEP) Qualifications:
Role Code 0: Classic Strength of Materials

Graduate Engineer September 2020 – Present
Engineering Analysis Services Limited (EASL), Altrincham

- Carried out multiple probabilistic assessments for the HYA/HRA boiler tubes and upper transition joints (UTJs) using a Monte Carlo method via the TUFARI assessment code. This involves the processing of large quantities of input data into the relevant databases and submitting these to the pre-processors for generation of input files. Output files are then processed to determine the predicted annual failure rates for both creep-fatigue and plastic collapse failure mechanisms. Originated multiple reports for both HYA/HRA to present the results and discuss implications for Boilers Group at Barnwood.
- Continuous training and development based on EDF Energy's SQEP modules.
- Carried out literature searches of mechanical, electrical and thermal properties for 40 cryogenic materials as specified by the client. Regular updates were provided to the team and client on project progress, as well as risks to timescales or costs.

Graduate Design Engineer September 2016 – September 2020
Vital Energi

- Battersea Power Station - Mechanical design of Low Temperature Hot Water (LTHW), Natural Gas and Ventilation systems in line with appropriate IGEM regulations, British Standards and CIBSE guidance. This cross-sector project required working closely alongside several other companies. I was also accountable for the comparison and evaluation of major plant items and provided the client with technical submittals, highlighting the preferred equipment.
- Drakelow Recyclable Energy Facility - Liaising with various sub-contractors and suppliers to meet targets, I was responsible for producing mechanical loads and water service requirements for various offices' and plantrooms through estimation and calculation in line with standards such as BS EN 806 and NHBC requirements. Subsequently, I designed the building services to achieve

these and coordinated with other trades. I also worked to standards such as IGEM UP 16 and ensured compliance with DSEAR.

- Pipe Sizing Optimisation - I created a VBA code within Excel to calculate heat-loss from DH pipes. The Design Department continue to use this to size pipes "economically", by balancing heat-loss with pressure drop (and therefore pumping costs) whilst limiting velocities to avoid excessive flow accelerated corrosion.

Other work experience:

- I completed a project for TISS Ltd, where I utilised Finite Element Analysis to analyse and adapt a fuel security solution for the haulage industry. Realistic loads were determined for the analysis, which was modelled using ANSYS. Initially, a course mesh was utilised before refining in appropriate areas such as those of high stress concentrations or sharp geometry. I was able to recommend improvements to the design including bending radius' and material selection which would improve the performance of the part as well as reduce manufacturing costs.
- A project was carried out for a sports equipment company, to optimise an innovative design for sports equipment in accordance to British Standards. The device is designed to give the user the benefits of altitude training by restricting air flow during exercise. I utilised Solidworks Flow Simulation (CFD) to model fluid (air) flow through the product, and made changes to the geometry to increase the desired effect.

Fourth Year Project: Design and Optimisation of a Multi-Axis Wave Energy Converter

ANSYS AQWA simulations were performed in order to predict and optimise the hydrodynamic performance of the innovative design. A scale model was constructed, and tested in the university's wave tank. This scale model could be used to generate inputs for a hydraulic test rig, which was developed to smooth the power output of the inertial-mass power take off system. Results of the project were promising, with levelized energy costs calculated to be within similar ranges of current renewable energy sources, after scaling the design to a known sea state.

Third Year Project: Modelling and Control of Biological/Biomedical Systems

Open and closed-loop data previously collected from horses in a riding club in Lier, Belgium, was re-examined. Whilst earlier research used discrete-time models, this dissertation focused on continuous-time equivalents which aren't dependant on sampling rates. The non-linear behaviour of the heartrate was represented through a state-dependant Transfer Function. A non-linear controller was designed with state varying parameters which provided reasonable control, allowing precautions to ensure horse welfare, and efficient training regimes to be developed.

Other skills:

- Matlab, Simulink and SimMechanics.
- Solidworks.
- AutoCAD.
- FEA (ANSYS).
- EnergyPro.
- Microsoft Office (including Excel, PowerPoint, Word etc.)