

Versatile engineer with a future-focused skillset and a passion for programming, performance, and emerging technologies. Delivered award-winning work across academia and fast-paced startups through the development of novel solutions to complex engineering problems. Continuously deepening expertise through certifications, personal projects, and postgraduate study across multiple domains.

Core Competencies

- Application & Toolset Development
- Dynamic Modelling & Simulation
- Automation & Optimisation
- Data Analysis & Visualisation
- Machine Learning & Data Pipelines
- Technical Communication

Career Experience

ClearMotion, London, United Kingdom

August 2024 – Present

Virtual Tools & Methods Engineer

Senior Engineer at an automotive-tech startup driving innovation in motion-control by integrating machine learning with vehicle dynamics and high-performance hardware.

- Developed, deployed, and continuously improved bespoke simulation and analysis tools for internal teams and external customers, applying modern programming practices and integrating new technologies.
- Lead engineer on 'Virtual Sensor' project to replace physical component with a machine learning model. Developed an automated workflow to perform model training, evaluation, containerisation, analysis and optimisation.
- Worked with large-scale vehicle telemetry datasets, supporting data acquisition, workflows, and data analysis techniques to communicate insights to Director-level stakeholders.
- Applied vehicle dynamics and multi-domain modelling techniques to develop and validate high-fidelity simulation models to support system performance and robustness targets.

Rivian Automotive, Woking, United Kingdom

February 2022 – August 2024

Vehicle Simulation and Modelling Engineer

Member of a cross-functional team which drove innovation in automotive simulation by pioneering a software-led approach to vehicle development at a globally renowned elective vehicle startup.

- Recipient of Rivian's *Top Talent* Award in recognition of outstanding performance within role.
- Contributed to the creation and correlation of a 'full vehicle' digital twin through subsystem modelling, test suites, and simulation infrastructure to support product delivery across a range of vehicle attributes.
- Contributed to the development of '*Vehicle Simulation Interface*', a centralised platform to enable non-simulation engineers to perform simulations using centralised component data. Owned key aspects of the tool, including optimisation toolboxes, automation routines and multi-domain analysis scripts.
- Reduced physical testing requirements by assisting driver-in-the-loop (DIL) sessions through on-site experiment design, live coding, model integration and operational support.

Jonathan Jamison

IPG Automotive UK Ltd. & Ford UK, London, United Kingdom
Application Engineer

February 2021 – February 2022

Resident Application Engineer designing and building industry-leading virtual test-driving simulations and strategies within Ford UK. Responsible for leading several aspects of the inaugural Formula Student Virtual Lap Time competition.

- Enhanced existing technical knowledge and skills within vehicle dynamics modelling, programming best practices, developer tools, and data analysis to produce quantifiable performance improvements for customers.
- As part of the governmental virtual engineering *Project ViVID*, created technical end-user documentation, delivered in-person training, led webinars, and authored several articles on simulation development for publication.

Queen's Formula Racing | Suspension Team Leader & Assistant Performance Team Leader
Provided technical leadership to support highly successful Formula Student team.

August 2018 – August 2020

Generac Power Systems | Engineering Intern, Powertrain Development
Successfully completed two summer internships at Generac HQ in Wisconsin, USA.

Summer 2018 & 2019

Education

Postgraduate Certificate in Artificial Intelligence (PGCert), with Distinction
Ulster University, Belfast, Northern Ireland
Masters-level modules studied as part of scholarship, including Big Data & Infrastructure, Machine Learning, Statistical Modelling & Data Mining.

Master of Engineering in Mechanical Engineering (MEng), 1st Class with Honours
Queen's University Belfast, Northern Ireland
Award winning final year project centred around the creation of a high-fidelity vehicle simulation, inclusive of machine learning for optimal parameter generation. STEM Ambassador & Peer Assisted Learning mentor.

Honours & Awards

Global Undergraduate Awards Winner & Highly Commended Entrant for final year project, 2020
Outstanding Project Award (2nd Place) for final year project, presented by IMechE & NAFEMS, 2020
Degree+ & Millenium Volunteer Award, Queen's University Belfast, 2020
Category Winner and Overall Finalist, *What's the Big Idea?* & QUBSU Dragons Den, SU Enterprise, 2019
Finalist, Leaders within Engineering Scholarship, Royal Academy of Engineering, 2018

Personal Projects

Spring-Mass-Damper Machine Learning Model | Python, Plotly Dash, FastAPI
Interactive web app to replicate the dynamics of a mechanical system using a trained neural-network surrogate.

Bicycle Model Neural Network | MATLAB, Simulink, Python, TensorFlow
Replicating behaviour of non-linear system using automated workflow to simulate vehicle dynamics.

Technical Proficiencies

Programming: Python (NumPy, pandas, SciPy, TensorFlow), MATLAB, tcl. Familiar with C++ & SQL

Tooling & Platforms: Git, FastAPI, Docker, AWS (foundational), IPG CarMaker, Jira