Sean Marandure

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Education

Master of Science – MSc Data Science and Advanced Computing
University of Reading Expected Graduation: September 2026
BCS Accredited Degree

- Modules: Mathematics and Statistics for Data Science (PCA, Linear Algebra, Calculus, R); Data Science Algorithms and Tools (KNIME, R); Applied Data Science with Python; Artificial Intelligence and Machine Learning (Python, R); Big Data and Cloud Computing (Hadoop, Microsoft Azure); Data Security and Ethics (Python, C, Java, Linux Shell, SQLite3); Research Project.

Bachelor of Engineering – BEng (Hons) Architectural Environment Engineering
University of Nottingham July 2024
CIBSE Accredited Degree

- Modules: MATLAB, Mathematics, Computational Fluid Dynamics, Project Management, Control Systems, Fluid Mechanics, Sustainable Technologies, Applied Engineering and Science, Computer Methods
- Achieved – 2:2

International Baccalaureate (IB) – 31 Points
Dartford Grammar School for Boys May 2019

- Subjects: Physics, Mathematics, English, Japanese, Geography, Design Technology: Product Design

GCSEs – 11 Subjects including Maths (A), English (B), Computer Science (A), Statistics (A)
St. Columba's Catholic Boys' School July 2017

Projects

BEng Final Year Research Project – CFD-ML Urban Microclimate Optimisation
University of Nottingham May 2024

- Developed a CFD machine learning framework to optimise urban microclimates using ANSYS Fluent and TensorFlow; created analytical data visualisations in Matplotlib to interpret model outputs
- Trained an artificial neural network on CFD-generated data to interpolate missing values and predict optimal building geometries for pedestrian wind comfort
- Used Python, NumPy, TensorFlow, and APIs for data gathering, pre-processing, wrangling, cleaning, feature extraction and model training; applied statistical methods (PCA, and regression) for model validation
- Validated CFD simulations with real weather data; achieved successful ML-based optimisation in wind velocity predictions; derived actionable design insights from data-driven optimisation

SolveMyMatrix – CLI-based Matrix Solver (Python, NumPy, SymPy)
An educational tool to assist in solving linear systems using matrix transformations.

- Implemented Gaussian elimination and inverse matrix computation in Python
- Designed input validation flow for command-line interface
- Used this as a study aid while completing Coursera's Mathematics for Machine Learning course
- GitHub: https://github.com/STMdevelops/SolveMyMatrix

Experience

CAD Engineer
Caice Acoustic Air Movement Ltd | *Winnersh, UK* August 2024 – September 2025

- Developed parametric CAD automation scripts using Autodesk Inventor iLogic (VB.NET-based scripting language) to programmatically automate custom acoustic door model generation
- Enabled dynamic, user-driven parameterisation for rapid CAD model generation
- Enhanced legacy Autodesk Inventor template systems via rule-based scripting, integrating mechanical engineering principles with algorithmic software logic
- Collaborated cross-functionally with design and manufacturing teams, validating scripted outputs against acoustic performance specifications and production tolerances
- Gained practical exposure to software engineering concepts including logic structures, conditional automation, rule-based systems, and parametric modelling, informing subsequent interest in algorithmic methods and data-driven decision making in machine learning

Industrial Cadets Engineering Internship
BAE Systems | *Rochester, UK* December 2017 – May 2018

- Developed smart wearable tech prototype for defence environments, applying systems engineering and product lifecycle principles
- Awarded CREST Gold for innovation and engineering excellence

Technical Skills: **Programming** (Python, VB.NET, MATLAB, R), **Database** (SQLAlchemy, SQL), **Data Science** (TensorFlow, NumPy, SymPy, Matplotlib, KNIME), **Tools & Environments** (Git, VS Code, Postman, Jupyter, Anaconda), **Development** (HTML, Flask)