

# Toby Smith – Curriculum Vitae

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## Profile

A highly motivated engineering manager with a proven track record of delivering quality results, taking on new challenges with enthusiasm and learning new skills quickly. Accustomed to taking a pragmatic approach to problem solving after working on several complex technical projects. Experienced in the use of MATLAB for engineering simulation, data manipulation and the development of new engineering tools. After several years in the defence aerospace sector, seeking to expand horizons and build upon existing skill set in a new industry.

## Employment

### **MBDA (UK) Ltd – Meteor Programmes Aerodynamics Lead**

**2020-Present**

- Leads a team of five aerodynamicists to deliver projects worth £3.5 million on the Meteor beyond visual range air-to-air missile programme.
- Communicates complex technical concepts in a clearly understandable manner to non-technical internal and external customers, including in a second language.
- Collaborates closely with other departments to minimise the impact of uncertainty in input data and requirements on a project to deliver an innovative solution to a complex technical problem. Works to identify and manage all interdependencies between several separate engineering departments.
- Encourages challenges to the accepted way of doing things to drive continuous improvement. Supported a trial of an alternative software package within the Meteor team which allowed the automation of a previously time consuming and manual task and reduced process time from hours to minutes.
- Maintains a strong interest in innovation and the continuous development of new tools and capabilities within the department. Participating in an activity to guide the future tool development strategy for the department.

### **MBDA (UK) Ltd – Aerodynamics Engineer**

**2016-2019**

- Received company innovation award for role in an agile team which successfully developed a new suite of departmental tools allowing idle PC resources to be utilised for performance modelling, reducing run times from weeks to days.
- Contributed towards the implementation of a joint code development process and promotion of collaborative working practices in the department, preventing the creation of duplicate scripts and improving overall codebase robustness.
- Performed complex aerodynamic analyses, primarily using MATLAB and a Linux based High Performance Computer, a key part of which involved collating disparate data sources and manipulating them into a format suitable for use in aerodynamic studies.
- Developed a configuration controlled “wrapper” for the main product performance model that greatly increased the accessibility of the model from only a handful of engineers in the department having the necessary knowledge to any competent MATLAB user being able to carry out their own simulations.

### **MBDA (UK) Ltd – Integration & Systems Validation Engineer**

**2013-2016**

- Demonstrated logical thought processes and problem solving skills in a high pressure environment and received a company special recognition award for diagnosing and resolving a hardware simulator bug during a live customer demonstration.
- Received a second special recognition award for making significant improvements to experimental trials software. Identified and eliminated data transfer bottlenecks to reduce run times and refactored sections of the software to remove a hardware thermal limitation.
- To support the completion of these tasks, quickly learnt both serial databus analysis and the basics of Python programming on the job in a self-supported manner.

## **Rolls-Royce plc - Undergraduate Placement Student**

**2010-2011**

- Took part in a fast paced trials programme involving remote collaboration due to the trial site being located in the USA. Analysed test data on a daily basis to help inform the procedures and objectives for the next set of tests.
- Carried out failure investigations on in-service products using logical problem solving and fault analysis techniques. Regularly presented the results of often complex technical investigations to non-technical customer representatives.

## **Education**

### **University of Bath – MEng (Hons) Aerospace Engineering (2:1)**

**2008-2013**

- Completed a group business and design project as part of a small team working to design a new airliner to a challenging specification
  - Took responsibility for all performance modelling for the project, including writing a full performance model for the airliner in MATLAB, the output of which was used to inform design decisions for each iteration of the design.
  - Took feature requests from other members of the team to continuously improve the fidelity, robustness and usability of the performance model.
  - Used scrum techniques such as morning stand up meetings and sprints for each design iteration.
- Carried out a challenging final year research project simulating the fluid flow inside a gas turbine. Independently gained a working knowledge of a suite of specialist software packages through traditional study, leveraging the knowledge of peers and practical experimentation.
- Studied a broad range of engineering topics including modules covering mathematics, engineering simulation, modelling and the use of MATLAB.

## **Personal Achievements**

- For the past several years I have been studying Spanish, with the majority of the learning process being self-guided. Through strong and sustained self-motivation and resilience I have progressed from a complete beginner to an upper intermediate level. I plan to continue this process and sit formal examinations at an advanced level in the next few years.
- One of the primary motivations for studying Spanish was to prepare me for my recent sabbatical. In September 2019 I took a 12-month sabbatical to cycle solo through Latin America. Navigating unfamiliar cultures in a second language greatly improved my interpersonal and communication skills. The journey also reinforced existing planning, organisational and problem solving skills as well as demonstrating self reliance.
- I am currently using these same abilities to carry out self-guided online study and practical exercises to expand my coding experience in MATLAB into areas such as Ruby, Rails, HTML and CSS. I am putting these new skills into practice by constructing a personal portfolio website and a simple web app to record photo metadata when practising film photography, one of my principal hobbies.