

Lani Widdeson

Email: laniwiddeson@gmail.com

LinkedIn: Lani Widdeson

Website Portfolio: www.ironicchameleon.com

Education

UNIVERSITY OF BATH – MENG (HONS) MECHANICAL ENGINEERING WITH YEAR LONG WORK PLACEMENT (2020-2025)

- First Class Degree with Honors

RELEVANT MODULES:

- Group design project I & II (Design exhibition, technical report, and business case study) (2023/4): **71%**
- Medical Engineering (2024/5): **78%**
- Advanced Manufacturing Technology (2024/5): **82%**
- Product design and development (2024/5): **74%**
- Final Year Project (Making Power Tools Safer by Calibrating Users' Perception of Risks) (2024/5): **75%**

HARTISMERE SCHOOL (2013-2018) AND SIXTH FORM (2018-2020)

- A Levels: Maths **A***, Further Maths **A**, Physics **A**, EPQ **A***

Work Experience

- **Nissan Technical Centre Europe** (NTCE) (Industrial Placement) (2022-2023)
- Tutoring, Suffolk (between 2018 to 2024)
- Cocoa mama, Eye, Suffolk (2017-2020)
- Volunteer Freshers Captain (2021)

Engineering Experience

FINAL YEAR ENGINEERING PROJECT (2025)

MAKING POWER TOOLS SAFER BY CALIBRATING USERS' PERCEPTION OF RISKS: EFFECTS OF GRIP TEXTURES ON USER BEHAVIOUR

- In 2025 I completed my final year project with the goal of calibrating power tool users' risk perceptions and improving their safety.
- I chose to focus on improving the safety of a **hand-held circular saw** and **adjusting user behaviour** through the **application of different textures** to the power tool's handles. Colour was also explored as a secondary measure of influencing user safety.
- This project involved several stages of investigation to determine the influence of different grip textures on user behaviour and safety. For this, I conducted **interviews, surveys, and tests** with volunteers, then analysed the results.
- I utilized **CAD** and **3D printing** to create test parts and a final prototype.
- During final stage physical testing, the addition of the created textures increased the number of users correctly gripping the handle by 31.3% compared to the untextured saw. Upon adding certain colours this rose to **40.2% improvement**. This highlighted the positive effects of texture and colour on user behaviour leading to improved safety.

NISSAN TECHNICAL CENTRE EUROPE (NTCE) (2022-2023)

- For my year-long industry placement, I worked at NTCE in the **research and development** department as part of the **exterior design team**. I was responsible for the Horn on all Nissan European car models. As part of this responsibility, I was trusted to communicate with the supplier and design engineers to ensure the implementation of the horn was possible and viable.

- Another significant part of my role was focused on **headlamp simulation**. I ran the simulation software for showcasing current measured headlamp performances in a virtual space and created new digital files of improved headlamp profiles to use as goals for future vehicles.
- I consider this year to have been incredibly beneficial for my **professional development** and **business knowledge**. I learnt how the structure of a global business works and how teams and departments interact to bring a product from conception to launch. I also became more confident in meetings with project directors and suppliers and worked well both within the team and on individual tasks. I now have a broad knowledge of the automotive business and in-depth knowledge of how the automotive engineering industry works at part and assembly levels.

GROUP BUSINESS DESIGN PROJECT (2024) – BATH ROCKET TEAM

- In 2024, I completed a 30-credit group design module. This involved a **business case study** of an existing business, a **commercial viability report** of our team's proposed business, and a **technical report** of my personal design project.
- For this project I worked as part of a team of 20 students (**Bath Rocket Team**) designing a large model rocket to competition standard and specification.
- My assigned section of the rocket was the **Payload Bay**. I designed a payload bay with three main functions: restraining the payload during launch, opening the bay doors, and ejecting the payload. I designed this system independently but with respect to the requirements of the rest of the rocket (such as weight limitations) by communicating with the rest of the team. We also collaborated to produce a commercial feasibility study of our business case for rapid drone deployment by rocket.
- For this project I used my **CAD skills** to build a moving model of the payload bay and create all the bespoke parts for the project to a sufficient degree of accuracy that they could be manufactured in the future.
- I documented the design process throughout this project including steps such as concept and design phase, sourcing, validation, sustainability, and cost estimation.

3D PRINTING, WOODWORKING, AND DIY PROJECTS

- 3D printing is a hobby with which I have explored modelling both functional and artistic projects. Some of these include a weeklong analogue clock, an externally attached door lock, a Greek style bust, and 3D characters.
- I have designed and made several woodwork projects in the past couple of years. These include: an elastic band powered model plane and a hidden lock jewelry box, as well as various projects using resin.

Computing Skills

- I have used the following programs as a part of my course so far for coursework and lab reports: **MATLAB, AutoCAD, and Autodesk Inventor**.
- 3D modelling and printing software for personal projects: **Autodesk Fusion 360, Forger, Blender, Meshmixer, and UltiMaker Cura**.
- Other applications: **Microsoft Word, Excel, Power Point, Microsoft Teams, Zoom, Chat GPT, Davinci Resolve**.

Activities and Interests

- **Taekwondo:** 20 years experience and 1st Dan black belt; Experience coaching children's classes; University of Bath Taekwondo Club member 2020-2025, **Treasurer** 2022/3, **Events Coordinator** 2023-2025. My role as events coordinator for 2 years involved arranging transport and accommodation for 15-20 students and ensuring the weekends ran smoothly for our team.
- **Judo:** 16 years experience and brown belt.
- I also enjoy playing the **saxophone** and doing **art and crafts, woodwork, and 3D printing/modelling**.

Additional Qualifications/Awards

- Python and Apps certificate (Code First Girls)
- Bronze and Silver Duke of Edinburgh Awards
- Full UK Driving License