

# Jeannine Bastard

Design Engineer

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## Skills

SolidWorks | C language | Fusion 360 | Microsoft Office | CSS | ANSYS | ADAMS  
Physical Modelling | Hand Painting | Metal Fabrication | MATLAB | Python  
Adobe Software | Graphic Communications | Holistic Design | Prototyping  
Project Planning | Task Management | Numeracy | Mechanics | Manufacturing knowledge  
Conversational Japanese | Communication

## Education

### University

**BSc Hons Product Design Engineering** with a year of Professional Practice 2:1  
Brunel University

### Modules

- Electronics Programming and Interfacing (A)
- Materials and Manufacturing (A)
- Dynamics, Mechanisms and Stress Analysis (A)
- Computer Based Design (A)
- Design Process
- Mathematics (A)
- Physical Prototyping (A)
- Embedded Systems

### A-Level

Product Design	A
Maths	C
Physics	C

### GCSE

9 Qualifications with grades B to A\*

### Certifications

Full UK Driving License with access to own vehicle  
125cc Motorbike License  
First Aid at Work  
IEUK Technology (2020 & 2023)  
Canine First Responder  
Canine Toxicology: Approaching Pet Poisonings

## Life Projects

### Ava Safe

The device aims to significantly reduce the time taken to locate trapped individuals by incorporating a tracking system for the user's vitals. When the user's conditions worsen under the snow, the device triggers a beacon of light and emits a loud beeping noise to facilitate swift rescue. Such an innovative solution, which currently lacks existing alternatives, holds immense potential to enhance survival rates during avalanche incidents.

The development of a printed circuit board (PCB) and schematics to accommodate the product within a compact device. This undertaking provided me with valuable hands-on experience in utilizing KiCAD, a powerful PCB design tool, and honed my proficiency in designing optimized circuit layouts. Through this process, I acquired a deeper understanding of the importance of minimizing wires and streamlining soldering techniques, striving to maximize component integration on the PCB. This endeavor not only expanded my knowledge of electrical engineering but also sharpened my problem-solving skills, ensuring an efficient and space-efficient solution for the small device.

Additionally, I successfully coded a PIC micro-controller to control the functions of the compact device, further advancing my skills in embedded systems programming (especially in coding in SPI and I2C devices) and enhancing the device's overall performance for a prolonged battery life. This comprehensive project allowed me to integrate multiple disciplines, from electronics design to coding, fostering a holistic approach to problem-solving.

### Maritime based Hackathon, First place, Global group based competition

During the competition, I collaborated with a team to develop an innovative solution aimed at preserving and educating people about the delicate coral reefs. Our proposal reflected our shared passion for environmental conservation and showcased our ability to think critically and creatively in tackling urgent challenges. This experience deepened my commitment to using technology for positive impact and motivated me to continually seek opportunities to contribute to meaningful and sustainable solutions.

In this project, I took responsibility for the mechanics and safety of the vessel, ensuring its stability in the water and ease of manoeuvrability. Drawing inspiration from existing submersibles and biomimicry principles, our design earned us first-place. I successfully organized and led the team, conducting in-depth research on atmospheric pressure at various depths and developing cost-effective engineering proposals.

The project's compatibility with IoT technology was a significant consideration, I adeptly integrated these complex calculations and material considerations into a clear and concise presentation. These contributions earned me praise for my ability to communicate technical concepts effectively to non-engineers.

## Employment History

### **Sippen, Entrepreneurial pursuit accompanied by CRL, Hayes, July 2021 - July 2023**

Developing a prototype of an automatic cocktail machine for the hotel industry, by developing both electrical engineering skills with understanding business management and research for a sustainable and effective product.

#### **Achievements:**

- Leveraging my expertise in electrical engineering, combined with a deep understanding of business management and sustainable practices, I created a product that stood out as an innovative and effective solution
- In the face of dynamic market conditions, I showcased my adaptability by swiftly adjusting business strategies, revising product offerings, and exploring new target markets to ensure the cocktail machine's relevance and competitiveness by completing networking with potential investors to increase the viability of the product.
- Meticulous attention to detail and comprehensive understanding of the compliance requirements ensured that the prototype of the automatic cocktail machine fully complied with industry standards and safety regulations.

### **Freelance CAD Design on Solidworks, Fiverr, June 2021 - September 2022**

#### **Achievements:**

Designed and implemented 2d/3D Cad models and technical drawings to the clients specification to a consistent 5 star rating.

Effectively designed manufacturing methods and solutions which was taken on by the clients.

Proficiently developed the skills for sheet metal design on Solidworks.

### **Halfords Fitter and Assistant, Ruislip, April 2021 - August 2021**

#### **Achievements:**

- Utilizing my extensive knowledge and expertise in the realm of motor vehicles, I ensured impeccable and professional service delivery, gaining high ratings from clientele.
- Gained 3 qualifications for implementing sound systems and modifications to vehicles.
- Handled the intricacies of unique paint codes, diligently attending to vehicle scratches and imperfections, thereby guaranteeing meticulous repairs.

### **Production Assistant, Robinsons Plastic Factory, Mansfield, July 2020 - September 2020**

#### **Achievements:**

- Attained comprehensive knowledge of diverse types of injection moulding machines and sorting mats, demonstrating exceptional independence and proficiency in their operation.
- Effectively communicated with workers throughout the factory, fostering open dialogue for general discussions and promptly addressing any issues related to machine malfunctions.
- Exemplifying punctuality and drive, I efficiently managed multiple machines by the conclusion of each work period.
- Embraced the fast-paced working environment and upheld the importance of maintaining a clean and well-organized workspace, ensuring optimal productivity.

### **Rolls-Royce Engineer intern, 1 week work experience, Derby, 2018**

#### **Achievements:**

- By actively engaging in various departments, I gained valuable first-hand experience of the workplace through different employee roles.
- Performing diverse tasks such as metal bending and operating the computer system responsible for analysing civil large engines and also securing bolts into place with floor workers.
- Through effective communication with colleagues across different departments, I not only exchanged valuable insights but also developed a deep appreciation for their expertise and admiration for the company as a whole.

## Personal Statement

I find joy in delving into the intricacies of mechanical-electrical systems and continuously pushing the boundaries of technological possibilities. From optimizing mechanical designs of drones to fine-tuning precision components, I thrive on the challenges and rewards that the field of mechanical engineering offers. My hands-on experiences of reconfiguring automotive systems, have honed my expertise in the realm of mechanical components and systems. Most notably I have recently began rebuilding the front of my 1999 Skoda Felicia Fun. I aim to replicate the skills my course taught me throughout this process, from surface modelling in CAD to ADAMS and ANSYS analysis, my skills will provide detailed overview of the vehicles efficiency and modification possibilities.

My passion for understanding how electro-mechanical devices work and my relentless pursuit of knowledge drive me to continually seek opportunities to expand my skills. Whether it's designing innovative solutions or troubleshooting complex issues, I am driven by the thrill of discovering new insights and contributing to the advancement of electronic engineering.

With every project or job I undertake, I actively pursue continuous learning and self-improvement by enrolling in additional courses and qualifications. This commitment ensures that I consistently perform at the highest level of my capabilities. For example, each year I compete in an international technology course hosted by Bright Network. Endorsed by major finance and technology companies, this experience broadens my connections in the field and critical thinking.

I am an active individual who primarily develops skills in electro-mechanical engineering while also indulging in hobbies such as mountain biking, surfing, and learning languages like Japanese and Italian. I find that these diverse activities contribute to out-of-the-box thinking and a community approach to problem-solving, fostering both physical and mental growth.

### **Jeannine Bastard**

*Currently residing in  
Swanwick,  
Derbyshire*

**However, eager  
to relocate at own  
expense.**

