

# DHRUVA TEJA TURAGA | Curriculum Vitae

✉ dhruva.turaga@gmail.com • Hampton Vale, Peterborough • ☎ (+44) 7746 108966  
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## SUMMARY

I am an innovative engineering student with a strong foundation in mechanical and electronics design, dynamic analysis and design for manufacture. With hands-on experience in virtual reality simulations and data analysis, I am inspired by Renishaw's commitment to advancing manufacturing technologies and solving complex engineering challenges that impact lives worldwide. I am excited to be part of Renishaw's cutting-edge projects, working alongside experts to develop real-world solutions that drive innovation. What drives me to apply is the inclusive culture and dedication to continuous learning which resonates with my values and I am excited to contribute to its pioneering advancements while growing professionally within the team.

## EDUCATION

### BOURNE GRAMMAR SCHOOL

09/2016 - 06/2021

GCSE

Bourne, Lincolnshire

Grades: Mathematics 9, Further Mathematics 9, Biology 9, Chemistry 9, Physics 9, Design & Technology 9, Computer Science 9, Geography 9, English Literature 9, English Language 9, Spanish 7

### BOURNE GRAMMAR SCHOOL

09/2021 - 06/2023

A-Level

Bourne, Lincolnshire

Grades: Mathematics A\*, Computer Science A\*, Physics A, Further Mathematics A, EPQ A\*

### IMPERIAL COLLEGE LONDON

10/2023 - Current

MEng Aeronautical Engineering

South Kensington, London

Subjects: Mechanics, Materials, Mathematics, Structures, Thermodynamics, Intro to Aerospace, Aerodynamics, Computing and Numerical Methods, Engineering Practice

## EXPERIENCE

### PYTHON DATA ANALYST SHADOWING

06/2022 - 07/2022

Compare the Market

Peterborough, UK

- Completed an intensive shadowing at Compare the Market, focusing on **ADVANCED DATA ANALYSIS** techniques using Python.
- Worked closely with the data science team, gaining practical experience in **DATA CLEANING, MANIPULATION** and **VISUALISATION** using libraries such as **PANDAS** and **MATPLOTLIB**.
- Actively contributed to data-driven decision-making processes, leveraging statistical analysis to uncover actionable insights in real-world business scenarios.
- Developed a deep understanding of how **ANALYTICAL MODELS** and **DATA INTERPRETATION** are applied to optimise key business operations and strategies while honing problem-solving skills in a fast-paced environment.

### STUDENTSHAPERS INTERN AND UG TEACHING ASSISTANT

07/2024 - 10/2024

Imperial College London

South Kensington, London

- Successfully completed a Student Shapers internship at Imperial College London, mastering **C#** programming, **UNITY 3D GAME DEVELOPMENT** and the cutting-edge **VIRSE** framework.
- Collaborating with renowned professors on advanced virtual reality, focusing on the **DYNAMIC MODAL ANALYSIS OF FREE OSCILLATIONS** structures in beams and entire aircrafts.
- Applied innovative VR techniques to simulate and test **STRUCTURAL EFFECTIVENESS**, contributing to groundbreaking research in the field and curriculum at Imperial.
- Overcame a steep learning curve and a challenging commute to fully immerse in this highly impactful internship showcasing dedication, resilience and a passion for technological innovation.

# SKILLS

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## PROGRAMMING LANGUAGE FRAMEWORKS & IDES LIBRARIES DESIGN

**Experienced:** Python 3 | MATLAB | C++ | Kotlin | Java | SQL |  $\text{\LaTeX}$  | C#  
Excel | Git | Raspbian | LINUX | UNIX | Jupyter | Pycharm | Android Studio  
Matplotlib | Numpy | Pandas | Seaborn | Dash | Scikit-learn | PyTorch | SciPy  
SOLIDWORKS | Fusion360 | 3DExperience | Blender | Maya 3D-Animation |  
CircuitWizard | KiCAD | 3D Printing

**LANGUAGES** **Native:** Telugu | **Fluent:** English | **Intermediate:** Hindi | Spanish

# ENGINEERING PROJECTS

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## EM THOR'S HAMMER

2019 - 2020

### Personal Project

Arduino | Breadboard Design | C++ | SOLIDWORKS

- Crafted a custom Thors Hammer project with merging expertise in electromagnetics, RFID authentication, and Arduino programming. Inspiration from theHacksmith and Allen Pan to make a new design.
- Demonstrated versatility by transitioning from initial breadboard prototyping to professional-grade PCB manufacturing, coupled with precision 3D CAD design and printing utilising a homemade 3D printer.
- Ensured robust security and exclusivity through RFID sensor integration, allowing only authorised individuals with a specific key access to the project, showcasing a fusion of advanced electronics and innovative design techniques.

## SMART MIRROR

2019 - 2022

### Research & Development

Javascript | Python | Electronics

- Innovatively designed and constructed a Smart Mirror leveraging the MagicMirror framework, enhanced with a custom-built case featuring a one-way mirror, seamlessly integrating personalised information for users upon waking up.
- Implemented ultrasonic sensors to detect hand movements, enabling intuitive navigation between different mirror displays based on user identification, ensuring a tailored and interactive experience for individuals interacting with the smart mirror.
- Demonstrated adeptness in JavaScript coding by customising the MagicMirror framework to adapt to users' individual preferences and needs, ensuring flexibility and tailor-made functionality for a diverse range of users.

## WEATHER STATION

2020 - 2021

### GCSE Final Project

Arduino | C++ | HTML | SOLIDWORKS

- Designed and developed a comprehensive weather station project, featuring a custom-made PCB board and a suite of sensors to capture environmental data, coupled with sophisticated mathematical calculations in high-level C++ and Arduino programming.
- Integrated HTML for user-friendly data visualisation on ThingSpeak, enabling users to monitor trends and predict weather patterns based on real-time data analysis, while showcasing proficiency in web development and data presentation techniques.
- Employed SolidWorks to engineer a robust housing, ensuring the weather station's durability and stability in diverse environmental conditions, emphasising a holistic approach to hardware design and implementation.

## TELESCOPIC ASTROPHOTOGRAPHY

2021 - 2023

### Extended Project Qualification - A\*

Python3 | Matplotlib | Numpy | SciPy | OpenCV

- An astrophotography project, harnessing telescopes and Python libraries such as Matplotlib, NumPy, SciPy, and OpenCV, alongside Sequator for image processing, to capture high-definition images of the night sky.
- Used machine learning algorithms to analyse and identify cosmological objects within the captured images, culminating in an A\* qualification for the Extended Project Qualification (EPQ) and facilitating comprehensive research paper completion by efficiently covering a vast portion of the sky.
- Demonstrated data analysis and research methodology through the use of Python and machine learning techniques with systematic identification and analysis of celestial objects, contributing to the research paper's scientific inquiry and findings.

## AWARDS

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### BEST IN ENGINEERING 6 CONSECUTIVE YEARS

05/2016 - 05/2022

Bourne Grammar School

Bourne, Lincolnshire

- Consistently recognised as a leader in engineering for six years, showcasing excellence, innovation, and superior results in projects and solutions.
- Demonstrated continuous improvement, high standards, and positive impact, earning accolades and trust while driving progress in the field.

### CAPTAINED RITANGLE CHALLENGE

09/2021 - 04/2023

Bourne Grammar School

Bourne, Lincolnshire

- Led the team to success in the Ritangle Challenge, elevating our standing to one of the country's top teams by tackling complex mathematical problems across multiple rounds.
- Demonstrated adeptness in both advanced mathematics and computer science, strategically applying knowledge to efficiently solve challenging tasks and propel the team to victory in the competition.

### BRONZE, SILVER & GOLD DUKE OF EDINBURGH

10/2019 - 10/2023

Bourne Grammar School

Yorkshire Dales

- Earned the Bronze, Silver, and Gold Duke of Edinburgh Awards, showcasing commitment, resilience, and leadership through diverse outdoor and community-focused challenges.

## ACTIVITIES

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### SWIMMING

10/2019 - 10/2023

Extracurricular

England

- Participated in professional swimming competitions nationwide, demonstrating exceptional skill, dedication, and competitiveness in the sport of swimming.

### BADMINTON

10/2019 - Current

Extracurricular

England

- Participating in county badminton with ongoing dedication and enthusiasm.

### IMPERIAL COLLEGE LONDON ROCKETRY

10/2023 - Current

Imperial College London

South Kensington, London

- Integral member of Imperial College London Rocketry Team's electronics division, adept in designing complex circuits using KiCAD, collaborating effectively with Git and GitKraken, and ensuring precise integration with CAD for optimal placement on the ground station and within the rocket.
- Contributed expertise in electronics to construct circuits tailored for rocketry applications, leveraging knowledge of KiCAD for circuit design and Git with GitKraken for streamlined collaboration, enhancing team efficiency and project success.
- Utilised CAD to ensure electronic components were strategically placed within the rocket, facilitating optimal performance and reliability in propelling rockets to high altitudes accurately and consistently.