Jayant Bakolia

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Personal Profile

A results-driven and technically adept Robotics postgraduate student at the University of Manchester with a strong background in mechanical design, computational modelling, and full-stack software development. Experienced in leveraging C++, Python, and simulation tools such as Ansys and Star CCM+ to solve complex engineering problems. Previously led R&D projects at JSW Steel with measurable business impact and currently seeking opportunities in software, simulation, or automation systems where I can apply my interdisciplinary expertise in data-driven design and programming.

Education

2025 – 2027 University of Manchester
(MSc Robotics with Extended Research)

- Engaged in a multidisciplinary team project to design and build an autonomous robot capable of identifying, retrieving, and sorting coloured objects into bins, applying principles of robotic vision, control, and embedded systems.
- Collaborating with team members from diverse engineering and cultural backgrounds to integrate hardware and software components through structured design, testing, and validation cycles.
- Implementing and optimising control and perception logic in ROS 2, Python, and C++, using MATLAB and Gazebo for simulation, testing, and performance tuning to ensure robust navigation and object-handling accuracy.

2017 – 2022 Indian Institute of Technology Madras (Chennai, India)
(BTech + MTech in Mechanical Engineering – CGPA 8.57/10)

- Designed an electromechanical resonator using Carbon Nanotubes for antibunched phonon generation; increased operational temperature from <1 K to 1.36 K via parametric FEM analysis.
- Formulated and coded a parallel version of the Canny Edge Detector using C++ and OpenMP, achieving a 78.4% reduction in execution time and a speedup factor of 4.77 with multi-threaded processing.

2015 – 2016 Birla School Pilani (Rajasthan, India)

- A-Levels / CBSE Class XII – 94.4 %

2013 – 2014 Pilani Public School, Pilani (Rajasthan, India)

- GCSEs / CBSE Class X – 10 CGPA

Relevant Experience

Sep 2024 – Sep 2025 ScoreMe Solutions Pvt. Ltd., Gurugram, India
(Software Development Engineer)

- Engineered an extraction algorithm using C++, python, and java for diverse bank-statement PDF layouts achieving ~100 % accuracy across 1000+ formats, reducing manual effort by > 90 %.
- Integrated LLM-based classification pipelines to automate financial data categorisation with 95 %+ accuracy, improving credit-scoring workflows.
- Led junior developers through sprint planning, code reviews, and onboarding, ensuring consistent delivery.
- Designed and deployed scalable AWS infrastructure (Lambda, Fargate, EC2, S3) achieving 99.9 % uptime for financial processing services.
- Participated in Agile workshops, gaining hands-on experience in sprint planning and iterative development processes, resulting in improved project outcomes.

Jul 2022 – Jun 2024 JSW Steel Ltd., Vijayanagar Works, India
(Deputy Manager – R&D, New Product Development)

- Developed Monte Carlo-based model to optimise grain boundary dynamics in Hot Band Annealing process for Electrical Steels, cutting process time by 25 %.
- Worked with a team for development of C# based full-stack patent management system with cloud integration for rapid competitor intelligence applying software engineering principles to enhance user experience.
- Led development of a CFD & MHD simulation model for electromagnetic stirring, reducing dendrite formation and yielding ₹1 crore business impact.
- Partnered with IIT Bombay and collaborated with cross-functional teams on electrical-steel grade (50C350) optimisation and presented findings at IIM-ATM 2023 conference.
- Managed fatigue and impact-testing laboratories and coordinated new product development with clients such as Siemens and Honda.

Other Work Experience

May 2021 – Aug 2021 Caterpillar India Pvt. Ltd., Chennai
(Engineering Intern)

- Designed a cam-based retention system replacing nut-bolt assemblies, halving service time.
- Developed a numerical model for Belleville spring pre-loading (176 kN) verified through FEM in PTC Creo.
- Automated surface-undulation calculations for a motor grader using a VBA tool, reducing manual computation time.

May 2020 – Jul 2020 Amadasoft India Pvt. Ltd., Chennai
(Software Development Intern)

- Created a C++ data-preparation tool for CNN training, doubling dataset-processing speed.
- Integrated OpenCV and GUI in Windows Forms for efficient image manipulation.
- Enhanced a YOLOv3-based Deep Learning model in Python to detect CAD arrows, cutting manual work by 50 %.

Positions of Responsibility

May 2019 – Mar 2020 Shaastra, IIT Madras
(Concept and Design Head)

- Led design of reclining-spring and locking mechanisms using Fusion 360 for assistive seating devices.
- Conceptualized and supervised the overall ambience design for Shaastra 2020, ensuring cohesive artistic themes.
- Led a team of 13 volunteers working on designing and social engagement increasing followers across multiple social media platforms through creative event promotion.

Jan 2019 – May 2019 SAHAAY – Centre for Innovation (IIT Madras)
(Design Lead – Active Living Project)

- Led design of reclining-spring and locking mechanisms using Fusion 360 for assistive seating devices.
- Coordinated a team of 15 students to produce an improved alpha prototype through iterative design.

Additional Skills

- **Programming Languages:** C++, Python, SQL, MATLAB, Excel-VBA
- **Frameworks & Tools:** AWS, Bitbucket, Git, cURL, TensorFlow, Blazor, Microsoft Visual Studio, PyCharm, Ansys, Creo, Star CCM+, Autodesk Fusion, Power BI
- **Languages:** English (fluent), Hindi (Native), Japanese (JLPT N4 equivalent).

Interests and Activities

- Awarded Samsung-IITM Pravartak Award (2022) for outstanding work in Interdisciplinary Cyber-Physical Systems.
- Secured 2nd place in Gandhi Hazare Award (2019) by CSIE IIT Madras for social innovation.
- Achieved Asia Book of Records for developing android-controlled floor-cleaning robots (CFI-IIT Madras).
- Interests include programming competitions, creative product design, and hiking.