Shivam Kumar

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Objective

Highly motivated Aerospace Engineering student with strong fundamentals in rocket propulsion, aerodynamics, and space vehicle systems, supported by hands-on project experience in engine development and aerodynamic analysis.

Personal Details

- Date of Birth: 02/03/2004
- Nationality: Indian

Education

S. No.	Institute name	Degree	Percentage (%)
1.	Uttaranchal University	Bachelor of Technology (Aerospace engineering)	Pursuing (current – 95%)
2.	A. N. College	Intermediate of Science (I-Sc.)	67
3.	D.A.V Public school	Secondary School Examination (SSE)	88

Work Experience

VIKRAM SARABHAI SPACE CENTER (VSSC, ISRO) 3 July,25 – 29 Aug,25

ROLE: Academic Project – Vikram Sarabhai Space Centre (ISRO), Thiruvananthapuram (2025)

- Completed a 2-month research project at VSSC (ISRO) on characterization of wind gusts using measured high-altitude wind profiles for launch vehicle trajectory and stability analysis.
- Applied data processing and simulation techniques in the **Control, Guidance & Simulation (CGS/STS)** division to model wind-induced disturbances.

CAD Modelling April,25 – Current

ROLE: Product designer

- Designed industrial-level components using **SolidWorks, AutoCAD (2D), and CATIA**, meeting client specifications and engineering standards.
- Delivered **optimized, manufacturable designs** within strict timelines, demonstrating strong design execution and requirement analysis.

B.Tech Student Researcher Feb,25 – May,25

ROLE: Structural Analysis

- Conducted research on **aircraft wing structural analysis** as part of B.Tech Aerospace Engineering coursework.
- Performed **literature survey, wind tunnel testing, and ANSYS CFD simulations** on airfoil profiles used in commercial aircraft.
- Evaluated **aerodynamic and structural load distribution**, stress, deformation, and load transfer at critical wing locations.

- Applied results to support **material selection and structural design considerations** in line with industry aerospace standards.

Fly Dheera Pvt. Ltd May 2024 – June,24

ROLE: Assistant A.M.E

- Interned as Assistant AME at FLY Dheera Aviation (2024).
- Assisted in maintaining 2+ aircraft types with DGCA-compliant procedures.
- Performed pre-flight checks, diagnostics, and part replacements.
- Improved maintenance efficiency by 15% in daily hangar operations.
- Maintained accurate technical logs and safety documentation.

Aarsenalcorp Academic And Research Center June,2023 – July,23

ROLE: UAV DESIGN AND SIMULATION

- Completed internship at AAARC Pvt. Ltd. (2023) in UAV design and manufacturing.
- Assisted in the design and integration of aerodynamic components for optimal flight performance.
- Contributed to CAD modeling and structural analysis for lightweight UAV frames.
- Collaborated with a team of 10+ engineers to ensure system reliability and flight safety.

MISCELLANEOUS WORKS/PROJECTS

• Developed an **Arduino-based object-following car**.
• Designed an **Arduino-based radar system** for object detection.
• Executed **PCB design and fabrication**.
• Conducted **research on space suit life support systems**.
• Performed **web development** for responsive applications.
• Developed and deployed **mobile applications**.
• Implemented **digital marketing strategies**.
• Created a **rocket parameter calculation tool**.
• Currently developing **single and dual-propeller UAV systems**.

Skills

SOFTWARES

MATLAB	SOLIDWORKS	ANSYS	CATIA
OPEN ROCKET	XFLR5	COMSOL	ARDIUNO IDE
EASY EDA	FUSION 360	MICROSOFT OFFICE	

PROGRAMMING

HTML	CSS	REACT	JAVASCRIPT
PYTHON	SCIPY	NUMPY	JUPITER
META ADS	AWS	WORDPRESS	EXPRESS
MY SQL	NODE JS	PHP	

AREA OF INTEREST

3D Modeling **|** *UAV Design & Development* **|** *Propulsion Research (Solid, Hybrid, Liquid & Electric Engines)* **|** *Aerospace Computational Interface Design* **|** *Component & Performance Analysis (Physical & Virtual)* **|** *Aerospace Materials & Component Testing* **|** *Coding* **|** *Communication system***|** *Satellite observation* **|** *Satellite data analysis*

Publications

PATENTS:

1. Published

1.1. Anti crop instant damaging system(ACIDS) with integrated of AI and IOT

1.2. IoT based heating slippers for home use

1.3. IoT based battery power automatic heating container for food

2. Under Communication:

2.1. Smart waste detection and reporting system for urban roads using AI based image recognition

ARTICLE PUBLICATIONS:

1. Published

1.1. AI-Enhanced Living: The Future of Smart Homes, 2023 International Conference on Smart Devices (ICSD), A. Sinha, N. Sharma, S. Kumar, A. Lande, M. I. Iqbal, 2024, 10.1109/ICSD60021.2024.10751168

1.2. A. Pal, M. Gupta, S. S. Chauhan, S. K. Pippal, A. Sinha and S. Kumar, "Fuel Cell Vehicles: Technology, Challenges & Future Prospects," 2025 International Conference on Cognitive Computing in Engineering, Communications, Sciences and Biomedical Health Informatics (IC3ECSBHI), Greater Noida, India, 2025, pp. 420-425, doi: 10.1109/IC3ECSBHI63591.2025.10991210.

1.3. Singh, R., Yamsani, N., Iqbal, M.I., Sharma, D., Sinha, A., Kumar, S. (2025). Assessment, Implementation, and Monitoring of Industrial Safety and Potential Hazards. In: Bhattacharya, A., Dutta, S., Yang, XS., Goon, S. (eds) Innovations in Data Analytics. ICIDA 2024. Lecture Notes in Networks and Systems, vol 1408. Springer, Singapore. https://doi.org/10.1007/978-981-96-6297-5_3

1.4. Singh, R. *et al.* (2025). Microsoft HoloLens: Blockchain Assisted Wearable Augmented Reality in a Safety Critical System. In: Hassanien, A.E., Anand, S., Jaiswal, A., Kumar, P. (eds) Innovative Computing and Communications. ICICC 2025. Lecture Notes in Networks and Systems, vol 1431. Springer, Singapore. https://doi.org/10.1007/978-981-96-6681-2_32

1.5. Krishna, G. *et al.* (2025). Leveraging Gaussian Process Regression for Network Time Series Analysis. In: Hassanien, A.E., Anand, S., Jaiswal, A., Kumar, P. (eds) Innovative Computing and Communications. ICICC 2025. Lecture Notes in Networks and Systems, vol 1431. Springer, Singapore. https://doi.org/10.1007/978-981-96-6681-2_34

1.6. Sinha, A., Gehlot, A., Yamsani, N., Iqbal, M.I., Kumar, S. (2025). Artificial Intelligence in Monitoring Food Spoilage with ELISA. In: Virdee, B., Correia, S.D., Bedi, P., Swaroop, A. (eds) Proceedings of International Conference on Artificial Intelligence and Networks. ICAIN 2024. Lecture Notes in Networks and Systems, vol 1269. Springer, Singapore. https://doi.org/10.1007/978-981-96-4319- 6_43

2. Accepted Article:

2.1. NextGen renewable battery management harnessing AR/VR and digital twins

2.2. Green IT and sustainable information system: Innovations challenges and the part to a sustainable digital future.

3. Under Communication:

3.1. Numerical analysis on paraffin fuel with liquid oxygen for rocket engine at 30 bar

3.2. Numerical analysis on paraffin fuel with nitrous oxide for hybrid rocket engine at 60 bar pressure

3.3. Analysis of NACA 2412 & 4412 Airfoils through ANSYS

3.4. Structural analysis of aircraft wing.