

Harsh Pratap Singh

B.Tech (Computer Science & Engineering) |
VIT Bhopal University (2022 – 2026)
Email: harshpratapsingh.main@gmail.com
Phone: +91-8305777167
[LinkedIn](https://www.linkedin.com/in/harshprataps/): <https://www.linkedin.com/in/harshprataps/>
[GitHub](https://github.com/Harsh-Pratap-Singh): <https://github.com/Harsh-Pratap-Singh>

Education:

| Examination | University | Institute | Year | CGPA% |
|----------------------------------|------------|----------------------------|-------------|-------|
| Graduation (B.tech.) | VIT Bhopal | VIT Bhopal | 2022 - 2026 | 8.83 |
| Intermediate(12 th) | CBSE | Central Academy (Jabalpur) | 2022 | 87.2% |
| Matriculation(10 th) | CBSE | K.V no 1. G.C.F (Jabalpur) | 2020 | 91.4% |

PROJECTS:

PolypClassifier - Automated Polyp Detection | *Group Project*

Feb 2024 – April 2024

- Developed a **CNN-based medical image classification system** for colorectal polyp detection.
- Automated model training and evaluation pipelines, leveraging **ImageDataGenerator** and real-time loss visualization.
- Tuned **hyperparameters**, finding that a 0.9 **dropout rate** Model performed best.
- Improved model accuracy by **15%** through **data augmentation** and **hyperparameter tuning**:
- Initial Accuracy: 80% (Training) and 79.1% (Validation).**
- Post-Tuning Accuracy: 96.5% (Training) and Validation 94.9% (Validation).**
- Tech Stack:** Python, Keras, TensorFlow, NumPy, Matplotlib, Scikit-learn.

Transformer Model for English-to-Hindi Translation | *Self Project*

Oct 2024 – Dec 2024

- Built a **Transformer-based NLP** model for language translation, inspired by the "**Attention Is All You Need**" architecture.
- Designed **multi-head attention** and **encoder-decoder architecture** with positional encoding.
- Processed datasets with **custom tokenizers and padding masking**, achieving high translation accuracy.
- Trained and fine-tuned the model on a parallel corpus of English-Hindi text, achieving practical accuracy for multilingual communication applications.
- Tech Stack:** Python, TensorFlow, Deep Learning, NumPy.

Image Background Remover | *Self Project*

May 2023 – June 2023

- Developed a **Flask-based web app** for real-time image background removal.
- Utilized **PIL and rembg** for image segmentation and **Docker** for containerized deployment.
- Optimized file handling with **BytesIO**, reducing processing time by 40%.
- Tech Stack:** Flask, Python, Docker, (PILLOW) PIL.
- Project Repository:** [GitHub](#).

TECHNICAL SKILLS

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|---|--|
| • Programming Languages: | C, C++, Python, Java, JavaScript |
| • Machine Learning & Data Science: | TensorFlow, Keras, Scikit-learn, NumPy, Pandas, Power BI |
| • Web Development: | HTML, CSS, JavaScript, Flask |
| • Databases & DevOps: | MySQL, Git/GitHub, Docker |

ONLINE COURSES

The Bits and Bytes of Networking (*Google, Coursera*)

- Mastered TCP/IP, OSI model, DNS, subnetting, and routing fundamentals.
- Hands-on experience in network troubleshooting and internet security principles.
- Covered essential topics such as packet-switching, DNS, routing, subnetting, and security principles in networking.

Cloud Computing (*NPTEL - IIT Kharagpur*)

- Gained expertise in IaaS, PaaS, SaaS, virtualization, and cloud deployment models.
- Practical experience in Docker for containerized applications and cloud security.

CO-CURRICULAR ACTIVITIES

- **LeetCode:**
 - 800+ problems solved (Data Structures, Algorithms).
 - Global Rank: 589/26,000+ in a top-rated LeetCode contest.
 - 400+ days streak of continuous daily problem.
 - Earned 19 Badges in LeetCode.
- **Geeksforgeeks:**
 - **Contest Rating: 1770 | Global Rank: 3656**

EXTRACURRICULAR ACTIVITIES

- **Reading:** Avid Reader, favorite books include *Siddhartha* and *Tao Te Ching*. (Has read more than 100 books)
 - **Philosophy enthusiast:** Currently inspired by Confucius, Nietzsche, and Camus.
 - **Mind Mapping:** Completed an 8-hour **Udemy course** on **Mind Mapping**, improving skills in **visual organization and strategic planning**.
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