HARSH BAGHEL

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# EDUCATION

**B. Tech - Madhav Institute of Technology and Science Gwalior**

*Internet Of Things with 7.5/10 CGPA* **Jun 2021 – Jun 2025**

# WORK EXPERIENCE

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| **Intern DRDE-DRDO** | **Gwalior** |
| *Intern* | **Feb 2025 - Present** |

* Developed real-time chat app using MERN & WebSockets, supporting 100+ concurrent users with <200ms latency; integrated chatbot using LLMs for document summarization and instant replies.
* Implementing retrieval-augmented Generation (RAG) to enhance chatbot response by integrating real-time knowledge retrieval with generative models.

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| **Winter Internship Intern** | **Gwalior** |
| *Full Stack Developer Intern* | **Oct 2023 - Jan 2024** |

* Built MERN-based real-time chat system with secure authentication & role-based chat rooms; improved UI responsiveness by 35% via WebSocket optimization.

# Technical Projects

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| **Voice Control Bot** |
| *IoT Based Project* |

* Developed a voice-activated robot using Arduino and custom algorithms, achieving 90% command recognition accuracy and enabling precise movement control across 4 directions using motor integration.
* Led the design and development of the robot’s hardware and software integration.

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| **Movie Recommendation System** |
| *Full Stack Development | MERN Stack, MySQL* |

* Built a personalized movie recommendation system using MERN stack & MySQL, improving user engagement by 40% based on click-through tracking and reducing bounce rate by 25%.

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| **Plant Disease detection using CNN** |
| *Machine Learning* |

* Trained a CNN model on 5,000+ leaf images with 92% accuracy for real-time plant disease detection; reduced model inference time by 30% through lambda function optimization.

# ACHIEVEMENTS AND PARTICIPATION

* Delivered 3 live mentoring sessions on scalable web applications, improving participants' project delivery quality by 30% through hands-on collaboration and real-time feedback.
* Contributed to 3 open-source repositories and led 2 sessions in college tech clubs (ISTE, EI) on Python scripting and Git collaboration.

# SKILLS

* **Languages**: C, C++, Python, JavaScript — Used in full-stack apps and robotics logic
* **Frameworks:** React.js, Express.js — Developed modular UIs using React hooks and reusable components; implemented REST APIs for CRUD operations
* **Tools & Platforms**: Git, GitHub, MySQL, Firebase, NodeMCU, Raspberry Pi
* **AI/ML**: TensorFlow, CNN, Deep Learning — Applied in real-time plant disease detection project

**CERTIFICATIONS**

* + Platforma ISTE Bot Race Certificate
  + NPTEL Certificate (2024).