**Abhishek Kumar**

Portfolio: <https://codingadventure0.github.io/portfolio/>

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**Objective**

Innovative and results-driven **MERN Stack Developer**, **Python** and **Embedded Systems innovator** with expertise in **web development, automation, and IoT integration**. Passionate about building **scalable applications and hardware-software integrations** to solve real-world problems. Currently working as a **freelancer**, contributing to diverse projects across **web development, cybersecurity, and embedded systems**.

**Education**

**Bachelor of Technology in Computer Science Engineering (IoT)**  
Government Engineering College Vaishali, Hajipur , Bihar  
Expected Graduation: August, 2027

**Technical Skills**

* **Programming Languages**: C, C++, Python, JavaScript, Arduino Programming
* **Web Development**: MERN Stack (MongoDB, Express.js, React.js, Node.js)
* **Embedded Systems**: Arduino, IoT Integration, Microcontrollers
* **Cybersecurity**: Vulnerability Analysis, Ethical Hacking, Secure Coding
* **Hardware Skills**: Circuit Design and Testing, Hardware Engineering, Specification Analysis
* **Tools**: Git, Linux, Postman
* **Project Skills**: Problem Solving, Innovation in Hardware Projects, Embedded Systems, Microcontroller Integration

**Projects**

**1. Pragyan Rover Model (Chandrayaan 3 Simulation)**

* **Technologies Used**: Arduino, ESP32, Bluetooth Module, ESP32 Web Camera, Multiple Microcontrollers, C++ (Arduino Environment)
* **Description**: Designed and developed a Pragyan rover model, simulating Chandrayaan 3's rover operations. Integrated remote control via mobile phone, enabling real-time control of rover features, including solar panel and camera movement, and directional control (forward, backward, left, right).
* **Features**: Real-time mobile control, component integration for autonomous operation, live camera streaming for remote navigation.

**2. Mars Rover Model**

* **Technologies Used**: ESP32 Microcontroller, Hardware Remote (Joystick), LED/LCD Display, Camera Module
* **Description**: Created a Mars rover model that receives joystick-controlled signals via dual ESP32 microcontrollers (one for sending and another for receiving). This remote-controlled rover captures and transmits photos and videos to connected displays, allowing real-time monitoring.
* **Features**: Remote navigation, photo and video capture, real-time data transmission to mobile or large-screen displays.

**3. GEMINI-AI Jarvis - The Future of Assistance**

* **Technologies:** Python, OpenAI API, Google Gemini, Speech Recognition, NLP
* **Description:** Developed an AI-powered virtual assistant with real-time automation, voice commands, and NLP-driven decision-making.

Integrated web search, Wikipedia data retrieval, email automation, system management, and entertainment functionalities.

Planned enhancements include multithreading for improved performance, advanced API integrations, and adaptive learning.

**4. Web Application Fuzzer (Python)**

* Engineered a sophisticated Web Application Fuzzer to automate the discovery and testing of critical web components, including hidden directories, virtual hosts, API endpoints, URL parameters, and subdomains.
* Successfully identified vulnerabilities such as directory traversal, SQL injection, cross-site scripting (XSS), insecure file uploads, and parameter pollution, significantly bolstering web application security.
* Leveraged modern frameworks and tools to implement comprehensive scanning algorithms, delivering accurate and actionable security reports with high efficiency.
* Integrated a user-friendly interface for detailed reporting, enabling developers to mitigate risks seamlessly and improve code integrity.

**Achievements**

* **Finalist**, **Smart India Hackathon (SIH) 2024**: Recognized for the innovative design and practical application of the fuzzer.
* **Winner**, **Internal College-Level Hackathon**: Earned the top spot for solving critical security challenges and delivering a robust solution.
* **Python Programming Champion:** Earned the 1st rank in a competitive Python programming contest held at the college level, showcasing exceptional problem-solving and coding skills.
* **1st Prize in Web Development**: Recognized for designing a feature-rich and visually appealing web application.
* **National Space Day Recognition**: Received an appreciation certificate from ISRO scientists for the Pragyan Rover Model.
* **Public Display**: Mars Rover model is currently on display at the Planetarium in Patna, available for public viewing.

**EXPERIENCE**

## Don’t have industry level experience but seeking for intern to get industry experience and exposure.

**Hobbies**

* Coding & Innovation: Passionate about developing software solutions and experimenting with new technologies to create unique projects.
* Chess: Enthusiastic about strategic thinking and problem-solving, regularly engaging in chess for mental stimulation and competitive play.
* Table Tennis: Enjoys playing table tennis, focusing on improving reflexes, coordination, and teamwork.