Abhishek Kumar

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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 Science in Computer 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.