

Deepraj Chouhan

AI Systems Engineer

Versatile engineer with 6+ years of experience across full-stack development, AI/automation, and cybersecurity. Skilled in building secure, scalable applications, intelligent chatbots, and workflow automation systems. Passionate about leveraging AI and cloud technologies to drive innovation, strengthen resilience, and deliver business impact. **Currently seeking full-time onsite opportunities in the United Kingdom.** I hold a **UK Graduate Visa (Post-Study Work Visa)** valid until **February 2027**, allowing full-time employment without sponsorship.

Contact



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Academic Details

- **MSc Applied Cyber Security**
University of South Wales (Sept 2023 – Sept 2024)
- **BE Information Technology SB**
Jain Institute of Technology (Aug 2016 – Aug 2020)

Soft Skills

Communication | Leadership | Problem Solving | Collaboration | Project Management | Stakeholder Engagement | Documentation

Technical Skills

Programming Languages: JavaScript | Java | TypeScript | SQL | PHP | JSON | .Net | Python | C | C++ |

Frameworks and Libraries: React JS | Next JS | Node JS | Vue JS | Express JS | Laravel 8 | Codeigniter 4 | Django | Fast API | Spring Boot |

Databases: MySQL | Firebase | MongoDB

AI & Automation Tools / Technologies: OpenAI | Eleven Labs | n8n (Workflow Automation) | Twilio (Voice & Calling Bot Integration) | Dialog flow | Pandas | NumPy | Scikit-learn | Selenium

Cybersecurity & Research Tools: Wireshark | Burp Suite | Metasploit | Nmap | SAP Debugger | Oracle Cloud | VirtualBox | Kali Linux | ISO 27035 Standards | Python for Security Testing | Python (ML for Security Analytics)

Profile Summary

- AI-focused software engineer with **6+ years of experience** building backend systems, AI-driven automation, and secure cloud applications.
- Experienced in developing **LLM-powered applications, retrieval-augmented generation (RAG) systems, intelligent chatbots, and workflow automation platforms** using Python, OpenAI APIs, and modern backend frameworks.
- Strong background in **full-stack development, cybersecurity, and cloud infrastructure**, enabling the design of scalable and secure AI services for real-world production environments.

Work Experience

Software Engineer

T1 Tech

Nov 2024 - Present

- **Software Engineer – React.js & .NET:** Spearhead the design and implementation of scalable product architectures, boosting system efficiency and capacity by 50%.
- **AI-Enhanced Solutions:** Integrate AI-driven automation to streamline sales processes and optimize user experiences, driving a 40% uplift in engagement and operational performance.
- **Full-Stack Development:** Build and maintain robust frontend applications with React.js and TypeScript, and deliver cross-platform mobile experiences using Cordova on both Android and iOS.
- **.NET & Backend Expertise:** Develop new features, troubleshoot and resolve bugs, and continuously refine existing functionality using the .NET framework, SQL Server, and Python.

Software Engineer

Seven Islands Shipping Limited

Feb 2023 – Aug 2023

- **Redesigned Architecture:** Spearheaded a comprehensive overhaul of product architecture, improving efficiency and scalability by 30%.
- **AI-Driven Enhancements:** Implemented AI-powered features for sales automation and user experience

Publications & Research

Data Sharing s Exploring Using Augmented Reality (A.R.)

Mukt Shabd UGC, Care Journal (Jan 04, 2020)

- Explored the use of Augmented Reality for data sharing and visualization, highlighting innovative approaches to data interaction.
- Provided a detailed analysis of the practical applications of A.R. technology in enhancing user experience and data accessibility.

Origami-Inspired Rovers to Boost Mars Exploration

Mukt Shabd UGC, Care Journal (Jan 04, 2020)

- Proposed a novel design for Mars rovers inspired by origami techniques to improve mobility and adaptability in challenging terrains.
- Demonstrated the potential of lightweight and foldable structures in space exploration through comprehensive research and prototype testing.

Embedding Encrypted Consent Data in Medical Images Using Advanced Steganography and Cryptography

(On going)

- Developing a secure framework combining AES-256 encryption and Pixel Value Differencing (PVD) steganography for embedding consent data in medical images.
- Testing robustness against compression, cropping, and steganalysis attacks to ensure data integrity and privacy compliance (HIPAA).
- Aiming to create a prototype system and technical guidelines for integration with EHR platforms in healthcare.

optimization, resulting in a 40% improvement in engagement and operational efficiency.

- **Cross-Functional Leadership:** Led a team of four engineers while collaborating with product managers and designers to deliver high-impact solutions.
- **Frontend and Mobile Development:** Developed scalable frontend applications using React and TypeScript and launched a cross-platform mobile app with Cordova, broadening reach to Android and iOS.
- **Data Analytics Innovations:** Engineered a robust Python scraper for efficient website data extraction, empowering data-driven decision-making.

System Engineer

Tata Consultancy Services

Feb 2021 – Jan 2023

- **SAP CRM Security Management:** Ensured robust data security and compliance by managing the SAP CRM Security module and performing quarterly User Access validations.
- **Advanced Security Testing:** Conducted manual application security testing and grey box testing using SAP Debugger, reducing vulnerabilities and improving system resilience.
- **Cloud Migration Success:** Led the successful migration of the SAP CRM system to Oracle Cloud, ensuring seamless project execution and delivery.
- **Collaboration and Project Management:** Collaborated closely with the client team to meet project requirements and conducted regular meetings to update stakeholders, improving project transparency and efficiency.
- **Proactive Network Analysis:** Monitored network traffic and client activities on the SAP platform

Part-time Full-Stack Engineer

Fireblaze Technologies Pvt Ltd

June 2016 – Jan 2021

- **End-to-End Solution Development:** Designed and implemented the E-Learning platform 'Ignite,' boosting user engagement and functionality by 40%.
- **Website Performance Optimization:** Maintained and optimized the main website and blog platforms, improving performance, security, and user engagement by 50%.
- **Collaboration and Reporting:** Regularly reported product issues and insights to the founders and worked closely with the design and marketing teams to enhance user experience and plan effective campaigns.
- **Data-Driven Marketing:** Conducted weekly meetings with the digital marketing team, leveraging user behavior data to design and implement streamlined, efficient marketing strategies.
- **Design Challenge Resolution:** Collaborated with the design team to overcome challenges, leading to improved platform usability and higher user satisfaction.

AI & Automation Projects

- **AI Chatbot for Knowledge Retrieval**
Built a custom chatbot that scrapes data from websites and company documents, delivering answers using OpenAI. Integrated ElevenLabs for speech-to-text and text-to-speech, deployed as both a standalone web app and an embeddable widget.
- **Inventory Management Chatbot with Analytics**
Designed a chatbot powered by OpenAI and Python that connects to Excel sheets, answers questions, and provides analytics in natural language.
- **Portfolio Workflow Automation (n8n)**
Automated portfolio updates and feature tracking using n8n. Built workflows integrating APIs, webhooks, and AI models for real-time updates.
- **Telegram AI Assistant**
Developed a conversational assistant integrated with Telegram to process both text and voice inputs. Combined OpenAI models with Google services (Gmail, Calendar, Tasks, Contacts) and memory buffers to deliver personalized, context-aware automation.
- **Job Application Automation & Tracking System**
Built an end-to-end automation system that applies to jobs via LinkedIn/Indeed using structured data from Google Sheets, tracks application statuses, and sends automated email notifications. Reduced manual job application effort by 80%.

Cybersecurity Projects

Practical Implementation and Testing of Spectre Attack

- Created and executed a proof of concept (POC) for the Spectre vulnerability (CVE-2017-5753 and CVE-2017-5715).
- Demonstrated the function and impact of the Spectre exploit through detailed testing.
- Conducted comprehensive tests and documented the outcomes to analyze the exploit's effectiveness.
- Implemented and tested countermeasures to mitigate the Spectre attack, showcasing improved security measures.
- Provided thorough analysis and reporting on the vulnerabilities and the effectiveness of implemented countermeasures.

Traffic Segregation Using Machine Learning on CICIDS2017 Dataset

- Utilized the CICIDS2017 dataset to identify and segregate network traffic.
- Applied supervised and unsupervised machine learning algorithms using Python and R.
- Conducted experiments on selected virtual machines to ensure a controlled and reproducible environment.
- Evaluated the performance of various algorithms in differentiating between attack and normal traffic, providing detailed analysis and recommendations.

Cybersecurity Management and Incident Response in IoT Networks

- Investigated critical industry management issues, including potential cyberattacks, incident response techniques, and security solutions, within IoT networks.
- Conducted security investigations on IoT networks, addressing future cybersecurity issues, supported by the ISO 27035 standard.
- Explored IoT-based incident response techniques and future work to address challenges like automated incident response (Auto IR).
- Examined security management (SM) and incident response (IR) practices in a security-critical industry, providing a detailed report of findings.