Shubham **Bajaj**

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Education

University of Leeds	Leeds, United Kingdom
Bachelor of Computer Science	Sept 2022 - Ongoing

- **Courses:** OOP in C++, Compilers, Algorithms, Operating Systems, Data Structures
- **Awards:** Recipient of International Undergraduate Science & Engineering Scholarship

Business Experience

NITI Aayog (Public policy think tank of the Government of India)	New Delhi, India
Data Management and Frontier Technologies Division	May 2022 –Sept 2022

- Performed penetration testing on classified government applications by using MobSF and Frida; the scope was to check vulnerabilities against the OWASP mobile top 10 list
- Fixed 404 error webpages on official government websites by using burpsuite and python scripts; increased website visibility over 15 results through search engine optimization
- Analyzed and delivered a presentation about the various parts of a drone to senior government officials; enabled development of India's drone manufacturing capabilities
- Conducted through analysis of the technologic feasibility of India's DigiYatra platform; the findings were used for understanding the challenges of deploying AI-based facial recognition systems
- Examined the backend infrastructure of India's largest digital payment infrastructure platform (UPI); the analysis was used towards enhancing technological literacy of public policy officials

Projects & Hackathons

J.P. Morgan Code for Good Hackathon
Selected to participate in the Hackathon to put coding skills towards doing good for nonprofit organizations
- Created a web application to check if a product is cruelty free (if animal testing conducted on the product) by scanning by scanning it's barcode.
- Implemented Flask and Python for Backend along with JavaScript and Bootstrap for front-end

Smart Water Controller
Realtime water monitoring system with automatic water level control
- Designed a water overflow monitoring application using NodeMCU, ultrasonic sensor and relay; real time data transmission linked to Google Firebase
- Evaluated real time status of current water levels and pumping; enabled manual setting meet personalized requirements
- Created user friendly access by integrating the application with Telegram messaging app

Visitor Management System
Contactless Visitor Management system using facial recognition technology
- Used technologies such as NumPy, Pandas, OpenCV, PIL and MySQL
- Implemented Haar Cascade object detection algorithm for facial recognition
- Created an interactive graphic user interface (GUI) using Tkinter framework for real time visitor monitoring along with admin access control

Interactive Chatbot
Artificial intelligence based chatbot
- Developed a fully functional chatbot for an official Govt. of India website
- Deployed AWS lex for development and AWS lambda for backend operations

Autonomous Robot
Preprogrammed navigation robot
- Designed an autonomous robot for efficiently performing specified tasks based on probability and algorithms
- Utilized C++ and platforms including MIT app inventor

Skills

- Technical skills: C++, Python, MySQL, AWS, Bash, Git, Docker
- Hobbies: District level cricket player
- Language: Bilingual Communicator (English, Hindi)
- Leadership: Headed the school robotics team, and participated in International Robotics Competition