SUKHVINDER SINGH

Software Development Engineer

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LinkedIn | GitHub | LeetCode

PROFILE

Results-driven Software Development Engineer with over 2 years of professional experience in designing, developing, and deploying scalable backend systems. Proficient in building robust RESTful APIs, optimizing distributed systems, and implementing microservices architecture using Python and Node.js. I am skilled in database design and management with PostgreSQL, MongoDB, and Redis caching for performance enhancement. Adept at leveraging Agile methodologies for collaborative software delivery. I have completed my MSc in Advanced Computer Science with Distinction, specializing in AI/ML integration, prompt engineering, and backend system scalability. I am passionate about driving automation, improving system throughput, and applying machine learning techniques to solve real-world problems.

EDUCATION

University of Essex   *Colchester, Essex, England*
Candidate for MSc Advanced Computer Science   *November 2025*

- Classification: Pass with Distinction
- Master's Dissertation: Achieved Distinction (82/100) in final research project
- Relevant Coursework: Machine Learning, Data Science & Decision Making, Game AI, Intelligent Systems & Robotics, Mobile Application Programming, Computer Security

University of Delhi   *Delhi, India*
Candidate for BSc (Honours) Electronic Science   *May 2022*

- Performance: First Division (CGPA 7.4/10)
- Relevant Coursework: Artificial Intelligence, Data Sciences, C Programming & Data Structures, Embedded Systems, Microprocessors & Microcontrollers, Digital Electronics

EXPERIENCE

Suraasa   *Gurugram, India*
Software Development Engineer   *May 2022 – August 2024*

- Engineered and scaled backend systems for the **International Teaching Olympiad**, serving over **20,000 concurrent users**.
- Developed scalable REST APIs in Node.js and Python, enabling seamless data flow across microservices.
- Integrated **Redis caching** for Authentication, reducing API response times by **30%**, and optimized system throughput under peak load.
- Led the end-to-end design and development of a **credential management system**, including database architecture, project workflow, and implementation to store and manage users' certificates, alongside developing a comprehensive user enrolment system.
- Implemented a centralized authentication package in TypeScript with token-based security and **Single Sign- On (SSO)** for multi-service login; designed to simplify integration and enable easy installation across services.
- Created a reusable package that accepts JSON input and automatically generates TypeScript and Python code, enabling a centralized API solution across different services.
- Collaborated with front-end teams using **Agile methodology** to align backend APIs with UI/UX consistency and performance.
- Developed a user profile feature at Suraasa that leveraged **generative AI** to automatically generate users' resumes based on their profile data, enhancing user experience and personalization.

Suraasa   *Gurugram, India*
Backend Intern   *April 2022 – May 2022*

- Trained in **Node.js**, **Python**, and **Adonis.js**; delivered a self-initiated backend module for organizational use.
- Contributed to building a transaction management system within the finance module, integrating third-party payment gateways such as Stripe and Razorpay. Implemented taxation logic and payment splitting functionality to support complex financial workflows.
- Utilized **Git** for source control and streamlined team collaboration via pull requests and issue tracking

Hybrowlabs Technologies
Web Development Intern

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Gurugram, India
June 2021 – January 2022

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- Collaborated with the team to implement front-end components, ensuring cross-browser compatibility.
- Developed responsive web pages using HTML, CSS, and JavaScript, enhancing user experience and accessibility.
- Gained hands-on experience in debugging and troubleshooting UI/UX issues across various platforms.

PROJECTS

- **AI & Machine Learning Projects:** Successfully completed a group project developing an AI-driven emotion recognition and attention detection tool for neuromarketing. The system uses deep learning and affective computing techniques to analyze consumer emotions and attention using multimodal data sources such as facial expressions, heart rate, EEG, eye-tracking, and galvanic conductance.
- **Web 3 Metaverse Platform (Dissertation Project):** Leading the development of a Web 3 Metaverse platform for autistic children (aged 7-12), focused on creating virtual spaces that accommodate sensory needs and support alternative communication methods. The platform includes customizable avatars, interactive tools promoting social skills, and safe virtual environments, built using A-Frame / Three.js technologies following Agile methodology.

SKILLS AND INTERESTS

- **Programming Languages**: JavaScript, TypeScript, Node.js, Python, C++, HTML, CSS, SQL, Nginx
- **Frameworks & Libraries:** Express.js, Django, Django REST, React, AdonisJs, A-Frame, Three.js, Pandas, NumPy, TensorFlow, Docker
- **Databases:** PostgreSQL, MongoDB, Redis
- **Testing Frameworks:** Cypress, Mocha
- **Version Control:** Git
- **AI/ML Tools:** Deep Learning, Convolutional Neural Networks (CNNs), Multimodal Signal Processing, Emotion Recognition Systems, Attention Detection Algorithms, TensorFlow, Keras, Scikit-learn, Data Preprocessing, Feature Engineering.
- **Additional Skills:** API Development, Backend Optimization, Problem-Solving, Collaboration, Agile Methodology, Leadership

INTERESTS AND HOBBIES

- Passionate about team sports, especially cricket.
- Cycling enthusiast with a passion for fitness and outdoor exploration
- Solving coding challenges on competitive programming platforms.
- Continuously learning advanced Python techniques and exploring new programming paradigms.

REFERENCES

Dr Katerina Bourazeri, Lecturer at School of Computer Science and Electronic Engineering (CSEE), email: a.bourazeri@essex.ac.uk

Chirag Jain, Solution Architect, Suraasa, email: cj@suraasa.com

Vasu Kataria, SDE-3, Suraasa, email: vasu@suraasa.com