

# Ujjwal Singh

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## SUMMARY

Management Information Systems graduate student with hands-on experience supporting enterprise-scale data validation, reporting accuracy, stakeholder analytics needs impacting 100+ courses and all business faculties at UIC, working directly with 30+ professors to guide system transitions and adoption. Strong background in data analysis, SQL, Python, AWS, and advanced Excel (PivotTables, VBA), with experience validating system data and translating technical requirements into scalable solutions. Seeking BI and analytics-focused roles with an interest in healthcare systems and data-driven decision-making.

## EDUCATION

**M.S. in Management Information Systems** – University of Illinois Chicago (Expected 2027)

Relevant courses: Health Information Management and Analytics, Project Mgmt, Advanced Database Management, Organizational Data Resources

**Bachelors of Tech. in Information Technology** – S.G.S. Institute of Technology and Science, India

## SKILLS

**Data, Analytics & BI:** MSSQL, Excel (advanced), Data validation, Modeling, Analysis, Reporting & Dashboards, Jupyter Notebook, Power BI

**Programming & Development:** Python, Java, C++, Spring Boot, Rest APIs, Automation, Scripting, Backend Services, ELT

**Cloud & Security:** AWS (EC2, S3, Lambda, RDS, Cloudwatch, Cloud 9), Snowflake (SnowPro Associate), Zscaler, Cloud-Native Architecture, Git

**AI / ML:** Machine Learning, Computer Vision (MediaPipe, OpenCV), Real-time systems, data pipelines, model evaluation

**Professional Skills:** Analytical thinking, problem-solving, Critical thinking, Documentation, cross-functional collaboration, Agile/Scrum

## EXPERIENCE & TRAINING

### Learning Systems Migration Engineer, University of Illinois

August 2025-Present

- Led large-scale LMS migration from Blackboard to Canvas, auditing, validating, and standardizing data structures across 100+ courses to ensure reporting consistency and platform integrity.
- Collaborated concurrently with 30+ faculty and instructors to translate instructional requirements into technically sound, Canvas-optimized course implementations, also working on documentation and platform governance.

### Machine Learning Intern, Autobot Robotics Ltd.

June-July 2023

- Built and optimized 2 real-time perception pipelines for a LiDAR-based autonomous car kit, achieving 15–20 FPS object detection and improving navigation reliability through sensor data validation and QA.
- Analyzed sensor stream streams + weather API data for a smart weather station, integrating ML outputs with real-time hardware in collaboration with electronics teams and troubleshooting issues via log/event analysis.

## PROJECTS

### Employee Management System

2024

- Developed a full-stack Employee Management System using Spring Boot and MySQL, implementing CRUD operations with secure database connectivity and data protection.
- Designed and integrated role-based access control (RBAC) to ensure secure user management and authorization.

### Gesture Controlled Music Instrument

2025

- Built a virtual piano and drum system operated entirely through hand gestures, mapping multiple gestures to specific notes or sub-instruments that can be customized based on user preferences. This approach enhances accessibility, reduces the learning curve, and makes music creation more intuitive for beginners and casual users.
- Utilized MediaPipe for 21-point hand landmark detection, OpenCV for real-time video processing, Streamlit as the primary frontend, and PyGame for synchronized audio-visual feedback

## PUBLICATIONS

### Optimizing Business Operations: Integrating Internet of Things with Management Information System

December 2024

- Conducted research on IoT-MIS integration, providing insights on operational efficiency and digital transformation strategies. <https://tinyurl.com/ukvxbak>

### Real-Time Gesture Recognition for Virtual Musical Instrument Control Using Binary Finger Encoding

January 2026

- Designed a real-time webcam-based virtual musical instrument using MediaPipe hand tracking, enabling 32 gesture-controlled inputs with a Streamlit interface and low-latency Pygame audio engine for full melody performance. <https://www.ijfmr.com/research-paper.php?id=66600>

## ACHIEVEMENTS, CERTIFICATIONS & ACTIVITIES

- 2<sup>nd</sup> place, AWS JAM Hackathon** 2025
- Zscaler Zero Trust Associate Certification (ZTCA), Fundamentals of Cyber Security Certification (ZScaler)** 2025
- SnowPro Associate: Platform Certification (Snowflake)** 2026
- Member, Music Collective – Nunchux** 2021-Present  
Contribute to music production and release tracks on music platforms, while engaging in digital marketing and audience growth strategies
- NGO Member, Sumantra Sarvodaya Vikas Seva Parishad** 2021-Present  
Supporting initiatives for basic education of underprivileged children and infrastructure projects like safe roads and driving/training centers.
- Student Center Event Operations Assistant, University of Illinois at Chicago** 2025-Present  
Supporting planning and execution of university events by coordinating logistics, setup, and backend operations in collab with SC teams.