

# Sanyam Katoch

LinkedIn: [linkedin.com/in/sanyam-katoch](https://www.linkedin.com/in/sanyam-katoch)

GitHub: [github.com/sanyam-katoch10](https://github.com/sanyam-katoch10)

Email: [sanyamkatoch10@gmail.com](mailto:sanyamkatoch10@gmail.com)

Mobile: +91-9317718369

## Skills

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**Languages:** Python, Java, C, C++, HTML, CSS  
**Tools/Platforms:** GitHub, Jupyter Notebook, Streamlit, Google Cloud, Kali, MySQL  
**Frameworks/Libraries:** Keras, Scikit-learn, Pandas, NumPy, Seaborn, Matplotlib, OpenCV  
**Soft Skills:** Strategic Thinker, Collaborative, Deadline Driven, Fast Learner

## Projects

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**MiniGit — Git-Inspired Version Control System** | Python, FastAPI, DSA | [GitHub](#) Feb'26

- Designed and built a Git-inspired version control system to manage commits, file states, and repository history.
- Implemented Trees, Hash Maps, and Stacks for commit tracking, branching, and undo/redo workflows.
- Deployed a FastAPI backend with a browser-based terminal to execute Git-style commands and visualize commit trees.

**BotShield — CAPTCHA Refinement System** | CNN, Python, TensorFlow | [GitHub](#) Nov'25

- Developed an adaptive CAPTCHA generation framework to enhance security while maintaining usability for human users.
- Trained a CNN using TensorFlow/Keras on 6000+ CAPTCHA samples to classify difficulty levels and detect bot-solvable patterns.
- Built a dynamic feedback pipeline and Streamlit demo platform achieving ~85% accuracy for real-time CAPTCHA generation and evaluation.

**SegViSion — Image Segmentation System** | Python, OpenCV, PSO | [GitHub](#) May'24

- Built an AI-driven image segmentation system to detect complex object boundaries in images.
- Applied Particle Swarm Optimization (PSO) with Python and OpenCV to iteratively optimize segmentation thresholds.
- Achieved ~80% segmentation accuracy, outperforming baseline segmentation approaches for complex visual object isolation.

## Training

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**PEP Program - DSA Module (byteXL)** | [Certificate](#) Jun'25 – Jul'25

- Practiced Data Structures and Algorithms to improve problem-solving ability.
- Strengthened coding efficiency through regular algorithm practice.
- Gained understanding of core algorithmic techniques through structured hands-on sessions.

## Certificates

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- Oracle Data Platform 2025 Certified Foundations Associate | [Oracle](#) Mar'26
- Mastering Data Structures & Algorithms using C and C++ by Dr. Abdul Bari | [Udemy](#) Dec'24
- The Bits and Bytes of Computer Networking | [Google \(Coursera\)](#) Sep'24
- Software Development Processes and Methodologies | [University of Minnesota \(Coursera\)](#) Apr'24
- Deep Learning Fundamentals with Keras | [IBM \(edX\)](#) Mar'24

## Extra-Curricular Activities

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- Core member of the Technical Club (Palo Alto Networks) — Engaged in coding/tech club events, participated in workshops, hackathons, and peer learning sessions. Oct'25
- Social work Volunteer — Supported children with mental disabilities in an NGO by helping them with academic learning and developmental activities. June'24
- Hacker-a-thon — Competed in a Web + AI hackathon, contributing to innovative solutions and collaborative problem-solving. Mar'24

## Education

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- Lovely Professional University** Phagwara, Punjab  
Bachelor of Technology — Computer Science and Engineering (AI & ML) Aug'23 – Present  
CGPA - 8.0
- Mount Carmel Sr. Sec. School** Palampur, Himachal Pradesh  
Intermediate Apr'21 – Mar'23
- Mount Carmel Sr. Sec. School** Palampur, Himachal Pradesh  
Matriculation Apr'19 – Mar'21