Khushal Hemant Sharma

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SUMMARY

Machine Learning Engineer with hands-on experience in deep learning, computer vision, and end-to-end model deployment across mobile, cloud, and edge platforms. Proficient in PyTorch, TensorFlow Lite, OpenCV, and Flutter, with a proven track record of building real-time AI applications for facial recognition, object detection, and secure data transmission. Experienced in integrating ML systems into production-ready mobile apps and cloud pipelines. Published researcher in NeRF editing using diffusion-based generative models.

EDUCATION

Arizona State University, Tempe — **Tempe, AZ**
M.S. in Robotics and Autonomous Systems (AI concentration) — August 2024 - December 2025

SVKM Narsee Monjee Institute of Management and Studies (NMIMS) — **Maharashtra, India**
B.Tech. in Artificial Intelligence — June 2020 - May 2024

Coursework: Machine Learning, Deep Learning, Computer Vision, Robotics, Drone Technology, Natural Language Processing.

WORK EXPERIENCE

SiClarity Software Solutions — **Maharashtra, India**
Software Development Intern — May 2024 – Jun 2024

- Developed a machine learning prototype for knowledge management, streamlining data retrieval and reducing manual effort by over 30%.
- Migrated CI/CD pipelines from GitLab to GitHub, improving integration processes and reducing deployment errors.
- Designed scalable Flask APIs for machine learning model deployment, enhancing speed by 25% and automating workflows.

Celebal Technologies — **Maharashtra, India**
Data Science Intern — Jan 2024 – Apr 2024

- Developed a document-querying chatbot with the OpenAI API, automating data retrieval and cutting manual lookup time by nearly half. Leveraged advanced indexing techniques to enhance both search accuracy and response speed.
- Utilized Azure components such as AI Document Intelligence, CosmosDB, and Blob Storage to streamline document understanding, which led to a 30% reduction in the need for fine-tuning.
- Enhanced data retrieval using LangChain and RedisSearch frameworks, achieving notable improvements in response times and search accuracy.

GNVS Institute of Management — **Maharashtra, India**
Android Developer (6 hours/week) — Jul 2022 – Dec 2022

Volunteered as an Android Developer to contribute to the development of an alumni application. Responsibilities included:

- Created and refined the user interface and user experience to ensure an intuitive and engaging app design.
- Implemented application features and functionality, leveraging Java for the front-end and Firebase for back-end services such as authentication and database management.
- Created detailed documentation for code, features, and development processes.

PROJECTS AND EXTRACURRICULARS

DeepCover: Adversarial & Diffusion-Based Image Steganography Framework

- Developed an image steganography system using GANs and diffusion models for secure message embedding, enhancing security with forward/reverse diffusion processes for precise image reconstruction.
- Tested model robustness by processing 200,000 CelebA and 2 million Places images across diverse datasets.
- Achieved minimal encoding loss (0.005) and decoding error (0.10), with a PSNR of 27.89 and SSIM of 0.05, ensuring high image quality and fidelity.

TrueStream: Biometric-secured video streaming app with facial authentication

Built a secure, cross-platform video player app that uses real-time facial recognition for personalized access and cloud-integrated user data management.

- Integrated FaceNet (TFLite) model for on-device facial authentication, enabling passwordless and fast user login.
- Used AWS Amplify and S3 to manage encrypted face embeddings, user sessions, and secure video content delivery.
- Developed personalized video dashboard and playback controls using Flutter, with profile-based watch history.
- Achieved real-time ML inference (<150ms) optimized for mobile, ensuring robust performance across varied conditions.
- Demonstrated complete ML pipeline deployment from model optimization to edge integration and cloud authentication.

RESEARCH AND PUBLICATION

- Kulkarni, V., Sharma, K., Shah, M., & Kulkarni, A. (2025). LIDNeRF. *International Journal of Intelligent Information Technologies*, *21*(1), 1–18. https://doi.org/10.4018/ijiit.369336.