Astha Adhikari

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LinkedIn | GitHub | Website | Scholar

SUMMARY

AI Engineer with a Master's in AI Software and 4+ years of experience developing machine learning and generative AI solutions across research and industry. Specialized in Computer Vision, 3D object detection, LiDAR perception systems, and transformer-based architectures, with experience in ROS-based robotics and embedded AI deployment. Experienced in building LangChain and LangGraph agents and automation workflows using Large Language Models. Published researcher in image quality assessment, polyp segmentation, and AI super-resolution techniques. Proficient in PyTorch/TensorFlow with strong expertise in developing and deploying end-to-end AI systems.

TECHNICAL SKILLS

AI / ML: PyTorch, TensorFlow, LangChain, LangGraph, RAG, Transformers, LLMs, Vector Databases

Computer Vision: 3D Object Detection, LiDAR Perception, Image Segmentation, TensorRT, Super-Resolution

Development: Python, FastAPI, ROS, Rasa, REST APIs

Tools & Infra: NVIDIA Jetson, AWS, Docker, Git, Linux, MCP, Railway

EXPERIENCE

Software Engineer (Contract) *May 2026 – Aug 2026*
Appify Global *Melbourne, Australia*

- Delivered LLM-powered automation workflows, knowledge graphs, and analytics dashboards for a real estate client, enabling data-driven property insights and streamlined operational reporting.
- Built and shipped a production marketplace application end-to-end, including authentication, API design, cloud deployment on AWS and Railway, and release to production.
- Owned full-stack system design, development, and client delivery for SaaS and AI solutions spanning automation, API integrations, and deployment.

Associate AI Engineer *May 2025 – Aug 2026*
BookedAI *Melbourne, Australia*

- Architected production-grade LangGraph and LangChain agents using RAG and vector databases; integrated MCP tools to automate booking workflows, resulting in a 40% efficiency gain and significant API latency reduction.
- Built full-stack agentic automation pipelines spanning backend orchestration, API integrations, and production deployment for multi-platform travel booking.
- Implemented MCP-based tool ingestion and LangGraph workflow orchestration for autonomous agent decision-making across external booking services and APIs.

AI Perception Engineer *Sep 2023 – Oct 2024*

AR 24.7 *Seoul, South Korea*

- Optimised 3D LiDAR segmentation models (MobilePixor, Dual Key Attention) for edge deployment on NVIDIA Jetson using TensorRT; achieved a 70% increase in inference speed while maintaining high-fidelity detection for autonomous systems.
- Developed YOLOv7-based perception pipelines for sidewalk, traffic light, and fire detection on autonomous robotic systems using ROS.
- Implemented temporal-spatial BEV object detection (DualKeyMobilePixor, SST) trained on Waymo dataset for autonomous navigation.
- Applied model compression via torch-pruning and TensorRT optimisation for real-time edge inference on Jetson hardware.

Graduate Research Assistant *Sep 2021 – Aug 2023*

Gachon University *Seoul, South Korea*

- Led Generative AI and Computer Vision research in PyTorch, producing 3 peer-reviewed publications with benchmark improvements over baselines.
- Developed GAN-based polyp image synthesis pipeline for medical segmentation data augmentation.
- Designed Dual Key Attention Transformer architecture for 3D object detection and image quality assessment.
- Published AM-BQA in *Image and Vision Computing* (Elsevier); improved blind image quality assessment over baseline methods.

Software Developer *Apr 2020 – Aug 2021*

Wiseyak Solution *Kathmandu, Nepal*

- Engineered a high-traffic telemedicine platform and EMR system; integrated a custom NLP-based autocomplete feature using FastAPI, improving medical data entry speed by 40% while ensuring HIPAA-level data privacy.
- Built AI diabetic retinopathy detection system for automated retina scan analysis in clinical workflows.
- Designed HIPAA-compliant patient data graph (DGraph, FHIR, GraphQL) for secure medical record management.
- Developed COVID-19 demography tracking app for Nepal with GPS-based public health data visualisation.

Junior AI Developer *Jun 2018 – Jul 2019*

Mpercept Technology *Kathmandu, Nepal*

- Delivered production-ready AI applications, including Rasa-based conversational agents and Computer Vision tools for ICR and object localisation, resulting in a 60% reduction in manual data processing time.
- Built mobile document scanner app using OCR and OpenCV for automated text extraction.
- Developed YOLO-based car bumper dent detection and OpenCV lane detection for automotive applications.

PUBLICATIONS

AM-BQA: Enhancing Blind Image Quality Assessment Using Attention Retractable Features and Multi-Dimensional Learning *2024*

Image and Vision Computing (Elsevier), Vol. 147

Astha Adhikari, Sang-Woong Lee

Polyp Segmentation and Generalization using Style Conversion *2022*

ICNGC 2022 Proceedings

Astha Adhikari, Sang-Woong Lee

Review of Super-Resolution Techniques in Deep Learning *2022*

Proc. 2022 KING Spring Conference, Jeju, Korea

Astha Adhikari, Sang-Woong Lee

EDUCATION

Master in AI Software *Sep 2021 – Aug 2023*

Gachon University *South Korea*

Bachelor in Computer Engineering *Oct 2014 – Jan 2019*

Tribhuvan University *Nepal*

CERTIFICATIONS

Nanodegree Scholar, Computer Vision Udacity

IELTS 7.0 (English Proficiency) British Council / IDP

LANGUAGES

Nepali (native) | English (IELTS 7.0)

LEADERSHIP & COMMUNITY

- Active tech mentor, MLAI
- Active member, Robotics Meetup Melbourne
- Active member, Linux Users Group Melbourne
- Mentor, Udacity Nanodegree — Secure and Private AI Challenge
- Reached Level 2, Gachon Global Leaders Toastmasters

References available upon request.