Animikh Aich

animikh.me | animikhaich@gmail.com | (857) 260-0017 | linkedin.com/in/animikh-aich | github.com/animikhaich

SUMMARY

Machine Learning Engineer with 5+ years of experience in Applied Research and End-to-End Product Development. Proven expertise in translating complex ideas into scalable, production-ready computer vision and ML solutions.

EXPERIENCE

Moultrie (A division of EBSCO Industries, Inc.) **Remote, USA**
Computer Vision and Machine Learning Engineer *June 2024 - Present*

- Slashed annual infrastructure costs by over **$1 Million (~95%)** by single-handedly architecting a new **6x faster** ML pipeline, replacing a costly Databricks system and migrating all models to independently scalable **NVIDIA Triton** servers.
- Pioneered an **industry-first Animal Re-identification system** from concept to production, solving a challenge no competitor could by developing novel techniques to bridge the day/night domain gap; delivered the company's **#1 most-requested feature** by training over 25 models and using advanced **LDA/RFE feature extraction** to overcome extreme data limitations.
- Architected the user-loved **"Night Image Enhance"** feature, a novel 3-stage computer vision pipeline using **day-image references**, **deep learning colorization**, and **selective color transfer** to reveal previously invisible details in IR images, sparking positive social media engagement.
- Improved core **Animal Detection model accuracy by +16.4% mAP**, fixing critical detection errors and directly reducing negative user feedback by over 10%.
- Engineered and deployed **"Overwatch"**, a custom sidecar container that acts as a health monitor and load balancer, completely eliminating Azure Load Balancer costs of **$200-$300 per day**.

H2X Lab (Robotics and Autonomous Driving), Boston University **Boston, MA**
Research Assistant *Jan 2023 - May 2024*

- Designed a **novel offline evaluation metric** incorporating prediction uncertainty, achieving a **+13% improvement** in correlation between offline metrics and real-world driving performance. [**Accepted in IROS 2025 Conference**]
- Built a **real-world autonomous driving evaluation platform** using a Raspberry Pi-powered toy car, integrating **RTSP** for live video streaming and **MQTT** for control; offloaded model inference to a remote server and constructed a functional indoor model city with lanes, traffic lights, and obstacles for end-to-end evaluation.
- Bridged the **Sim2Real gap** by leveraging foundation models like **Segment Anything** and **Depth Anything** to effectively **transfer knowledge** from **CARLA simulations to real-world environments**, significantly enhancing model generalization.

Moultrie (A division of EBSCO Industries, Inc.) **Remote, USA**
Machine Learning Engineer (Contract) *June 2023 - Aug 2023*

- Delivered a **4x resolution enhancement** on wildlife imagery (640x360 to 2560x1440) by applying generative upscaling models, significantly improving user experience across variable lighting conditions.
- Developed an antler segmentation and counting system using **object detection**, **semantic segmentation**, and **pose estimation** with **Grounding DINO**, **SegmentAnything**, and **ViTPose+**, enabling precise deer rack analysis and scoring.
- Created a proof-of-concept demonstrating the feasibility of using **NeRF-based 3D reconstruction** techniques to model antlers from **monocular video**, validating their potential for real-world wildlife applications.

Wobot.ai **New Delhi, India**
Computer Vision Engineer and Lead *June 2019 - June 2022*

- **Led a cross-functional team of 14 engineers** to design and deploy **90+ real-time video analytics use cases** across **20K+ CCTV cameras globally**, doubling hygiene compliance rates in food and hospitality sectors.
- Developed and implemented **strategic development tools** and processes that **tripled engineering productivity** and reduced data-to-production time by **50%**, accelerating overall product delivery cycles.
- Architected and operationalized **vision-based person identification** and **multi-object tracking systems** to enforce safety and hygiene protocols, achieving a **25%+ reduction in non-compliance incidents** at scale.
- Pioneered a **synthetic data generation pipeline** for object detection tasks, cutting **manual labeling needs by 35%** and improving **model development speed by 25%**, significantly boosting team output.
- Increased real-time alert precision to **95%** by developing a novel **ensemble algorithm** leveraging **temporal image features**, reducing false positive rates by **30%** in production environments.

PUBLICATIONS

[IROS '25] Scalable Offline Metrics for Autonomous Driving (Accepted) *First Author*
[PNAS Nexus '24] Generative AI, Human Creativity, and Art *Acknowledged Contributor*
[ICInPRo '19] Encoding Web-based Data for Efficient Storage in Machine Learning Applications *First Author*
[ICERECT '18] Sentiment Analysis of Restaurant Reviews Using Machine Learning Techniques *Best Paper*

EDUCATION

Boston University **Boston, MA**
Master of Science (MS) with Thesis in Artificial Intelligence May 2024

SKILLS

Languages: Python
ML/DL Frameworks: PyTorch, TensorFlow, Keras, PyTorch Lightning, HuggingFace, LangChain, Qdrant
Model Optimization & Deployment: TensorFlow Serving, Intel OpenVINO
Data Science & CV: NumPy, pandas, OpenCV, Seaborn
Cloud & MLOps: AWS, Azure, Docker, NVIDIA Triton, TensorRT, MLflow, DVC, W&B
Web & Visualization: FastAPI, Flask, Streamlit