Joshua H. Mistal

Contacts

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Professional Summary

Computer Engineering student with a focus on Machine Learning and AI Specialization Driven to build scalable, data-driven applications by integrating modern AI and data frameworks with stable architectures. A proactive community builder with a proven track record of teaching technicals, orchestrating development workshops, and turning complex algorithms into intuitive software solutions.

Experience

Part-Time AI & Software Engineer — Project-Based June 2026 - Present
Prodigitality Services Inc. | Remote

- Applied AI engineering workflows and MCP-based validation to build Pacific Insurance PH's Next.js and Supabase operations platform, translating 26 client specification documents into secure modules across eight configurable insurance workflows; produced a centralized system for managing the full client lifecycle.
- Developed the First Nations Action Network website and the upcoming YACHATDAC site with Next.js, interactive tools, and accessible design; improved access to community resources and services.

AI RDD Intern (Computer Vision) July 2025 - *Sep* 2025
DOST - Advanced Science Technology Institute | Diliman, Quezon City

- Developed deep learning face-embedding models achieving 0.99+ AUC (ResNet-50, Vision Transformers with ArcFace loss) on standard benchmarks and dataset (VGGFace2, LFW, CPLFW) through computer vision pipelines using PyTorch, Torchvision, and scikit-learn, on a single HPC GPU (A100, SLURM, Conda).
- Delivered comparative analysis of 5+ model architectures and validated results with ROC AUC and EER metrics across 10K+ tested pairs, while ensuring reproducibility through modular codebases, configuration files, and documentation for peer review.

Co-Lead, Department of AI *Oct 2025 - Aug 2026*
AWS Student Builder Group Polytechnic University of the Philippines | Sta. Mesa, Manila

- Led and facilitated hands-on workshops including Python, Machine learning fundamentals, and Langflow helping 50+ participants build foundational machine learning and AI and GenAI knowledge and skills.
- Collaborated with the tech department team to design workshop contents and improve learning outcomes through feedback.

Frontend Freelance Developer *Sep. 2024 - Jan. 2025*
PUP Graduate School | Polytechnic University of the Philippines - Sta. Mesa, Manila

- Collaborated with a 3-developer team to build and deploy a graduate school alumni portal for tracer study research, successfully used by 130+ alumni with positive feedback from the client on usability and effectiveness..
- Designed and implemented core pages and components (authentication, settings, home dashboard) in React and Tailwind based on Figma designs.

Education

Bachelor of Science in Computer Engineering *August 2023 -*
Polytechnic University of the Philippines *Expected 2027*

Technical Skills

Programming & Frameworks: Python (Flask, Django, SQLAlchemy, TensorFlow, PyTorch, Scikit-Learn, NumPy, Pandas, Matplotlib, Seaborn), GeminiAPI, Langchain, Langgraph, ClaudeCode, JavaScript (React, Bootstrap, Tailwind)
Databases: SQLite, MySQL
UI/UX & Creative Tools: Figma (UI/UX Design & Prototyping), Photoshop, Canva, Davinci Resolve, Ableton Live
Productivity & Collaboration: MS Office (Word, Excel, PowerPoint), Slack, Git, Github, Teams, Jira, VSCode
Operating Systems: Windows (10/11), Linux (Fedora, Ubuntu), Bash, Package Managers (*dnf*, *apt*),

Certificates

AWS Certified AI Practitioner — *Sep 2026 - Sep 2029*
AWS Training and Certification - Amazon Web Services — Credential ID: **97dd1e0a-7e94-4399-aae1-568789e42bdf**

Machine Learning Specialization — *Aug 24, 2024*
DeepLearning.AI, Stanford University - Coursera — Credential ID: **IUSRFKDYUNDB**

Awards and Scholarships:

DOST-SEI S&T Scholarship (RA 7687) — Awarded 2023
Science Education Institute of the Department of Science and Technology
- Currently holds the DOST-SEI S&T RA7687 Scholarship

DataCamp Scholar — Awarded 2024 & 2025
Datacamp
- Awarded since Dec. 2024 and currently holding the Datacamp Scholarship Program under AWS CC PUP through its Skill Builder Developer Team.

Projects

Automated Semantic Segmentation Pipeline for Autonomous Driving (SIDLAK) - Shell Eco-Marathon Poland 2026
(*Python*, *PyTorch*, *Ultralytics YOLO*, SAM 3.1, ONNX, *OpenCV*, *Kaggle*)
- Engineered a fully automated, config-driven data pipeline engine that consolidated four fragmented notebooks into a single end-to-end pipeline (extraction, zero-shot labeling, with QA augmentation, training, and export), slashing the entire dataset generation and model deployment lifecycle from several days to under 4 hours.
- Eliminated hours of manual labeling by deploying SAM 3.1 batched multi-prompt zero-shot inference across 9 target classes, integrating an automated QA bridge that isolates mask predictions with < 0.85 confidence for human review.
- Trained a 10-class YOLO semantic segmentation model and exported the optimized ONNX architecture for edge deployment on a Jetson Orin Nano, feeding real-time visual perception data into downstream RL algorithms for autonomous steering and obstacle detection.

IskoChatAI
(*Generative AI & RAG*, *Data Engineering*, *Prompt Engineering*, *GeminiAPI*)
- Contributed to IskoChatAI, a Filipino language chatbot for guiding students through scholarship and enrollment processes.
- Led research on DOST scholarships and PUP academic requirements, crafted context-specific prompts using Gemini API for accurate responses, and enhanced the chatbot's UX design to improve usability and relevance for student users.

Ultralytics YOLO-V11 Object Detection for Sealife (Crab) Fishing and Debris Assessment - Roboflow
(*Roboflow*, *Python*, *IoT*)
- Fine-tuned an Ultralytics YOLOv11 model using a curated dataset consisting of 9,899 combined images of crabs and marine debris (pruned by 10%) from Roboflow Universe for object detection.
- Trained and prepared the model on Google Colab with a mAP@50 of 87.0%, enabling teammates to deploy it via Roboflow API on a Raspberry Pi for real-time sealife monitoring and debris assessment.

Continuous Learning & Development

Deep Learning Specialization Course & Mathematics for Machine Learning Course — *Nov. 2024 - Present*
DeepLearning.AI, Stanford University - Coursera