William C. Loe

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EDUCATION

University of Maryland	Exp. May 2026

M.S., Applied Machine Learning, GPA: 3.89 | Phi Kappa Phi Honor Society

Texas A&M University - Corpus Christi	December 2020

B.S., Computer Science, minor in Mathematics

SKILLS

ML Frameworks: PyTorch, Hugging Face, Scikit-learn, XGBoost, LightGBM, Optuna
ML Techniques: Fine-tuning, Embeddings, RAG, Prompt Engineering, Class Imbalance Handling
MLOps & Tools: Docker, MLflow, Weights & Biases, AWS (Lambda, ECS, S3, Glue), SQL, Redis, REST/gRPC APIs

WORK EXPERIENCE

Software Engineering Intern	*Inovalon - Bowie, MD*	May 2025 - August 2025

- Designed and deployed a **full stack,** real-time multi-cloud inventory platform using FastAPI, PostgreSQL, Redis, ECS, and Lambda to **track over 2 million asset** resources with real-time ingestion and normalization
- Integrated a model-based **anomaly detection module** (Isolation Forest) into production backend, enabling real-time **risk flagging** and **dashboard reporting**
- Built an internal alternative to a **$200K/year SaaS platform**, reducing dependency risk and **full replacement** through a **cloud-native architecture**
- Enabled **retraining pipeline** through feedback ingestion and Optuna tuning, improving precision by 12%

Software Engineer II - Platform	*Aruze Gaming Global - Las Vegas, NV*	June 2021 - March 2024

- Developed patented **Poker Progressive System**, generating **150+ orders** within 3 months of launch
- Improved performance and reliability of a casino-grade **IoT system** by **optimizing hardware-software integration** with Raspberry Pi, Arduino, and Teensy
- Led architecture and development of core components for a modular casino gaming platform, supporting diverse math models including HHR, Class II, and CDS

TECHNICAL PROJECTS

Fishnet AI	*Indonesia National Research and Innovation Agency (BRIN)*	May 2025 - Present

- Collaborated with BRIN oceanographers to prepare findings for the **Global Fishing Watch Research Grant** and **Graduate Climate Conference,** supporting sustainable fishing initiatives
- Developed an end-to-end ML pipeline to classify fishing activity types and detect presence using **120K+ AIS vessel records** and **100GB+ satellite environmental data** with engineered time-series features
- Delivered **68% accuracy** (AUC 0.71) and **62% precision** in fishing-presence detection via Optuna-tuned LightGBM/XGBoost and spatiotemporal feature engineering

PresenTuneAI	*OpenAI Hackathon*	August 2025 - September 2025

- Created a **4.7k-pair + 33GB** corpus with **OCR** to **LLM cleanup** (Groq + GPT-OSS-20B) and a Flask QC/monitoring app; implemented **semantic alignment** using keyword/embedding/structural signals with grid-search tuning
- **LoRA-tuned GPT-OSS-20B** (FP16/MXFP4/LoRA variants) delivered **95% JSON** adherence and **reduced editing-effort**; multi-agent tool-calling pipeline powers export (PPTX/PDF)

SkillMatchAI	*Hackathon Project*	April 2025

- Developed a **GenAI-powered** career assistant that analyzed resumes, survey inputs, and job data to recommend personalized roles using **Gemini API** and Pinecone with 74% top-5 match accuracy
- Engineered a**n ML pipeline** for **embedding-based retrieval** and matching 50K+ job listings and 3K+ profiles
- Integrated **CI/CD pipelines** and unit tests across FastAPI and ML layers, reducing deployment issues by 60%

PATENT

Progressive Poker Jackpot System - U.S. Patent 20,240,046,760. Issued February 8, 2024 (filed August 5, 2022)