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## SKILLS

- **Programming Languages:** Go, TypeScript, Python, JavaScript
- **Technology:** NestJS, FastAPI, Docker, MongoDB, PostgreSQL, Redis, Kafka, gRPC, LightGBM, Linux

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## EXPERIENCE

- **Sonat Game Studio** Hanoi, Vietnam  
*Software Engineer* Nov 2024 – Present
  - **Revenue Prediction Service (LightGBM, FastAPI, TanStack Start)**
    - Developed machine learning models using LightGBM to predict revenue for advertising campaigns, achieving an average RMSE  $\sim 9.88$  and  $R^2$  above 0.90.
    - Built a prediction API (FastAPI) and a model monitoring system to track performance.
    - Implemented a frontend dashboard with TanStack Start for visualization and model insights.
  - **Game Service Platform (NestJS, Go, MongoDB, Redis, Debezium, Kafka, gRPC, Testcontainers)**
    - Developed a microservices system for online features of 7 mobile games, serving over 1.6 million users.
    - Migrated API Gateway Service from Node.js to Go, boosting throughput and resource efficiency; ensured stability using Testcontainers.
    - Used Redis to implement high-concurrency features (leaderboards, tournaments) while minimizing response latency.
    - Utilized Debezium for real-time data synchronization across microservices.
    - Optimized inter-service communication via gRPC and event-driven Kafka messaging.
  - **Game Design Tool (Python, Streamlit, FastAPI, LightGBM)**
    - Automated solvability verification of 1,200+ levels with a state-space search algorithm.
    - Boosted level design productivity with an internal tool that auto-generates puzzle levels.
    - Built LightGBM models to predict level difficulty, achieving  $R^2 \sim 0.88$ .
  - **Internal Tracking SDK (C#, Unity)**
    - Developed a C# SDK for internal game tracking system, optimized for minimal impact on game performance.
    - Ensured data integrity and reliable delivery for integration across all company games.
  - **Customer Support AI Agent (NestJS, Ollama, BAML)**
    - Automated 90% of the customer review response process by building a backend system (NestJS) that integrated with a self-hosted LLM (Ollama) and BAML for structured outputs to auto-classify, tag reviews, and generate replies.

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## PROJECTS

- **NxN Tic-tac-toe AI Agent** github.com/pngoethach/tictactoe-ai
  - Built a full-stack Tic-Tac-Toe game with Go and HTMX featuring an AI opponent using the Alpha-Beta Pruning search algorithm.
- **HTTP Server from scratch** github.com/pngoethach/httpfromtcp
  - Built an HTTP server via raw TCP sockets with manual request/response parsing.
  - Utilized Goroutines to handle concurrent client connections and optimize throughput.

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## EDUCATION

- **University of Technology and Engineering (VNU-UET)** Hanoi, Vietnam  
*Bachelor of Computer Science; GPA: 3.36* Sep 2021 – Jun 2025
- **IELTS:** 6.5