

ENG SOTHY

Backend & AI Engineer

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Data Science & Engineering student at the Royal University of Phnom Penh who builds production-shaped backend APIs and integrates machine-learning models behind them. Comfortable across the full path from data and model to a deployed, containerized service. Seeking a backend or AI/ML engineering internship.

TECHNICAL SKILLS

Languages: Python, C/C++, Dart, SQL

Backend: FastAPI, REST APIs, JWT auth & role-based access, SQLAlchemy, PostgreSQL

AI / ML: PyTorch, YOLOv8, CLIP, PaddleOCR, FAISS vector search, BGE-M3 / text embeddings, multi-label classification, LDA topic modeling

Infra & Tools: Docker & Docker Compose, Git/GitHub, GitHub Actions (CI), pytest, Linux

Also: Flutter (cross-platform mobile), Kafka, PostGIS

PROJECTS

Auto-Parts Image Search Service

FastAPI · YOLOv8 · CLIP · FAISS · PaddleOCR

- Built a visual search service: upload a photo of a car part and get ranked matching products from the catalog.
- Engineered a multi-stage ML pipeline — YOLOv8 part detection, PaddleOCR for brand/part-number text, CLIP image embeddings, and BGE-M3 text embeddings.
- Indexed embeddings in FAISS for fast nearest-neighbor retrieval and merged catalog + vector results with confidence-weighted scoring.
- Exposed the pipeline as a documented REST API and packaged it with Docker for deployment.

Garage Service Provider — Backend API

FastAPI · PostgreSQL · JWT · Docker

- Designed and built the backend for a garage service platform: authentication, admin and technical-staff accounts, and the product/inventory domain.
- Implemented JWT login with role-based access control and a clean layered structure (models, repositories, routers, schemas).
- Delivered full CRUD for categories, products, and inventory, including stock restock/deduct and low-stock alert endpoints.
- Containerized with Docker Compose and added a pytest test suite (130+ commits).

AI Mood Journal

Flutter · FastAPI · NLP (multi-label + LDA)

- Cross-platform journaling app that analyzes entries to surface emotional patterns and the topics driving them.
- Trained NLP models for multi-label emotion classification and used LDA topic modeling to explain the “why” behind a mood.
- Built a Flutter mobile front end backed by a FastAPI service exposing the ML models as endpoints.

EDUCATION

Royal University of Phnom Penh

Phnom Penh

B.Sc. in Data Science and Engineering — in progress

ETEC Center — Computer Programming, C/C++ (2023–2024)

Hun Sen Chumpuovorn High School — Graduated with honors (2023)

LANGUAGES

English — Fluent (speaking, reading, writing) Khmer — Native