

# Thoop-hom (Trisha) Supannopaj

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LinkedIn | GitHub | Portfolio

## Summary

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U.S. Air Force Veteran and **Software Engineer specializing in AI/ML**. Skilled in building intelligent systems with **Python, PyTorch, TensorFlow, scikit-learn**, Hugging Face, and LangChain. Research includes reproducing **Meta AI's Toolformer**, exploring **Retrieval-Augmented Generation (RAG)**, and studying **Federated Orthogonal Training (FOT)**. Strong foundation in full-stack development for end-to-end deployment. Active Secret Security Clearance. Bilingual in Thai and English.

## Technical Skills

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**Programming:** Python, Java, JavaScript, HTML/CSS, SQL, PHP

**Frameworks/Libraries:** PyTorch, TensorFlow, scikit-learn, React, Next.js, Flutter, Node.js, Spring Boot

**Databases:** PostgreSQL, MySQL, MongoDB

**Other:** Git/GitHub, Unix/Linux, Agile, cPanel

## Education

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**Montclair State University**

M.S. in Computer Science

Expected Winter 2026

**Chulalongkorn University, Thailand**

B.F.A. in Fine and Applied Arts

Jul 2016

## Research & Projects

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### Toolformer (Meta AI) Reproduction

*Python, PyTorch, Hugging Face*

- Reproduced a self-supervised LLM that autonomously uses external tools (APIs, search, translation).
- Implemented API-augmented prompts, fine-tuned GPT-2, and evaluated on QA and math tasks.

### Retrieval-Augmented Generation (RAG)

*Python, FAISS/pgvector*

- Built pipelines with embeddings and retrieval to reduce hallucinations in LLM outputs.
- Experimented with chunking, prompt construction, and vector DBs for accuracy.

### Federated Orthogonal Training (FOT)

*PyTorch*

- Studied methods to mitigate catastrophic forgetting in continual federated learning.
- Reproduced gradient-orthogonality experiments and analyzed global stability.

### Climate Change Visualization Web App

*React, REST, Leaflet/Mapbox*

- Built dashboards with NASA/NOAA APIs for temperature and sea-level data.
- Designed interactive maps, filters, and mobile-first UI.

### Serenity Space E-Commerce Website

*PHP, SQL*

- Developed secure full-stack site with role-based access and hashed passwords.
- Managed database for products, orders, and inventory.

## Professional Experience

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### **Software Developer — 7 Eagle Group**

Feb 2023 – Jun 2026

- Built web apps using React, Node.js, Python, and SQL for client projects.
- Applied Pandas for data analysis and reporting on large datasets.
- Managed version control with Git/GitHub and CI/CD workflows.

### **Medical Logistics Technician — U.S. Air Force (Active Duty)**

Mar 2019 – Jul 2023

- Automated workflows with Python scripts; streamlined communications for medical staff.
- Administered logistics servers and security for 41 clinics and \$53M in assets.
- Recognized by Surgeon General for optimizing readiness; supported 159K beneficiaries.