Arundhathi Dev

Cincinnati, OH • (513) 413-5986 • devai@mail.uc.edu
linkedin.com/in/devaru-ai • github.com/devaru-ai

EDUCATION

University of Cincinnati **Aug 2023 - Dec 2025**
Master of Science, Computer Science **GPA: 3.6**

- **Relevant Coursework:** Deep Learning, Information Retrieval, Intelligent Data Analysis, Probabilistic Models

Visvesvaraya Technological University **Aug 2018 - July 2022**
Bachelor of Engineering, Computer Science and Engineering **GPA: 3.7**

SKILLS

Languages/Systems: Python, C++, Java, Bash, Git, Docker, REST APIs
ML & Deep Learning Frameworks: PyTorch, TensorFlow, JAX, Hugging Face Transformers, PEFT, LoRA
Models/LLMs: BART, CLIP, LLaMA 3, Mistral, Phi-2, GPT-4 (inference)
Retrieval & Orchestration: FAISS, LangChain, RAG pipelines, Multi-Agent Systems, Vector Search, Triton

FEATURED WORK

IntelliMesh: Modular Multi-agent System for AI-Powered Research Automation **May 2025 - Present**

- Built a **modular multi-agent system** (7 specialized custom agents) that orchestrates **planning, retrieval, evaluation, and synthesis**, delivering transparent, cited research outputs with strong guardrailing.
- Enabled **LLM-agnostic research automation** by integrating open-source models (**LLaMA 3, Mistral, Phi-2**) supporting plug-and-play swapping of agents, embedding models, data sources for flexibility and scalability.
- Achieved superior **answer relevance, faithfulness** (**LLM-as-a-Judge: 0.9/0.7**) vs. retriever-only baselines, with **100% uptime**, **zero error rate** via robust agent orchestration, real-time context flow, rigorous evaluation.

ContextVision: A CLIP-Powered Context Aware Multimodal Search Engine **Feb 2025 - Mar 2025**

- Engineered a **high-speed, scalable pipeline** using **FAISS** for **sub-second image retrieval** on large datasets, eliminating manual labeling through **CLIP's zero-shot capabilities**.
- Achieved $\sim$**266% increase** in **Precision@5** and **Recall@5** on benchmark evaluations by fine-tuning **CLIP** on captioned datasets for multimodal image retrieval.
- Improved **MRR by 352%** and **nDCG@5 by 325%**, demonstrating substantial gains in ranking quality and relevance after model fine-tuning.

EXPERIENCE

University of Cincinnati **Jan 2024 – Present**
Graduate Student Researcher

- Achieved near-SOTA text recognition accuracy with **99% less training data** than leading models (**120K vs. 6B+ lines**), democratizing advanced document AI for edge and resource-constrained environments.
- Engineered a unified detection and correction pipeline with **76% faster inference** than TrOCR, delivering robust, real-time document processing.
- Reduced deep learning model complexity by integrating **BART** with **DINO DETR** architecture, achieving a **97% smaller model** (**180M vs. 355M parameters**) than DTrOCR and **210% smaller** than TrOCR (**558M**).

Fampay (YC S19) **July 2022 – July 2023**
Software Engineer - Full Time

- Oversaw daily operation and quality of FamPlay—a gamification feature—supporting user engagement and app reliability during a period when FamPay's platform saw a **47% revenue increase** and high user engagement (**4M+ users**, **45 min/week average usage**).
- Engineered an automated testing framework using Selenium, TestNG, and BrowserStack, automating **100+ test cases** across Android and iOS platforms and reducing basic test execution time by **40%**.
- Owned end-to-end testing for the 'Missions' feature, which contributed to a **20% increase** in recharge transaction adoption and enabled the acquisition of **2x more ad partners** by enhancing user engagement.

Old Dominion University **May 2021 – July 2021**
ML Research Intern

- Achieved over **99%** test classification accuracy detecting stress from wearable device data using machine learning.

HONORS AND AWARDS

Graduate Incentive Award (GIA), University of Cincinnati, 2023-25

- **Top 10%** of graduate students for academic and research excellence