Abdul Aahad Vakani

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EDUCATION

DEPAUW UNIVERSITY
BA in Computer Science
Expected May 2026 | Greencastle, IN
Honor's Program
Dean's List

DEPAUW UNIVERSITY
BA in English Writing
May 2026 | Greencastle, IN
Honor's Program
Dean's List

LINKS

Github:// **aavrar**
LinkedIn:// **aahadvakani**

COURSEWORK

UNDERGRADUATE
Data Structures
Theory of Computation
Machine Learning
Object-Oriented Software Dev
Data Mining
Calculus II

AWARDS AND ACCOMPLISHMENTS

Presidential Ambassador
Dean's List
Honor's Program

SKILLS

LANGUAGES
Java • C • C++ • Javascript • Python •
CSS • HTML

SYSTEMS TOOLS
Embedded Linux, RTOS (theoretical), Git,
FastAPI, React.js, AWS, scikit-learn,
matplotlib, pandas, GridSearchCV,
PyTorch, TensorFlow

SCRIPTING
Python, Bash

HARDWARE PROTOCOLS
Experience with Ethernet, CAN (academic
exposure), device abstraction

DATABASE TOOLS
SQLite, JSON-based file I/O (custom
pipelines)

EXPERIENCE

DEPAUW UNIVERSITY | Information Technology Intern
May 2024 – Present | Greencastle, IN
- Automated IT workflows and internal mail sorting, improving ticket resolution speed by 20
- Developed system to route network issues to appropriate teams.
- Supported the university's SSO (Single Sign-On) transition, improving user experience across systems.
- Prepared and deployed hardware to faculty/staff, ensuring continuity of service.

DEPAUW UNIVERSITY | Resident Assistant
Jan 2025 – Present | Greencastle, IN

- Supported crisis management and peer mentorship for 80+ students; analyzed survey data to inform residential IT needs.
- Facilitated conflict resolution and community-building in diverse residential settings.

PROJECTS | RESEARCH EXPERIENCE

SWITCHBOARD – CODE-SWITCHING CORPUS PLATFORM
Full-Stack
1.5 months, Solo Project

- Developed a community-driven platform for collecting, analyzing, and sharing multilingual code-switching examples with comprehensive linguistic analytics.
- Built full-stack web application using Next.js frontend and Express.js backend enabling submission of code-switching examples with rich contextual metadata.
- Designed interactive dashboards with real-time charts showcasing language pair trends, platform distribution, and regional analyses.
- Engineered advanced search functionality across text content and contextual metadata.
- Implemented responsive UI optimized for desktop and mobile research workflows using React, Tailwind CSS, and Radix UI.
- Developed an extensible PostgreSQL database schema supporting any language combination via Prisma ORM and Supabase integration.

SWITCHPRINT LIBRARY   Open-Source Python NLP Library
April 2025 – July 2025
- **Technologies:** Python, PyTorch, Transformers (mBERT/XLM-R), FAISS, SQLite, scikit-learn, Streamlit, Flask
- Developed a Python library for detecting, analyzing, and **remembering multilingual code-switching** patterns across **176+ languages** and **12+ scripts**, including romanized Hindi, Urdu, Arabic, and Persian.
- Delivered **43–200× speedups**, tested on MacBook Pro M2 with end-to-end pipeline support, achieving **91–100% confidence** on diverse multilingual benchmark cases.
- Achieved **85.98% accuracy** using FastText, outperforming langdetect (84.49%) and operating **80× faster**; ensemble approach (FastText + mBERT/XLM-R + rules) boosts contextual accuracy on noisy, informal text.