Aayush Dalal

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SUMMARY >>

I am a self-disciplined, hard-working, passionate researcher/software professional with a goal of pursuing a career in the field of Generative AI, data science and information technology. Trained in Python, PyTorch, CUDA, informatica power center, Tableau, certified Python Programer, and certified AWS Cloud & AI practitioner. Proficient in English communication with creative writing skills.

EDUCATION >>

The University of Oklahoma, Norman, OK
Major in Computer Science

TECHNICAL SKILLS >>

Programming Languages	CUDA, Python, PL/SQL, Java, JavaScript, C, C++, Assembly
OS	Linux, macOS, Windows
Software	Informatica Power Center (ETL), Tableau (Data Visualization), Power Bi, KACE (Windows Management), Jira, Confluence, Jamf (Apple Asset Management System), Oracle APEX, Node.js
Databases	Oracle, MySQL
GenAI & Models	ChatRTX, Ollama, Generative AI Neural Networks, PyTorch, LangChain, LlamaIndex, Retrieval-Augmented Generation (RAG)
Agentic AI & Orchestration	Multi-Agent Systems, Tool Orchestration, Prompt Orchestration & Chaining, Vector Databases (Pinecone, FAISS, ChromaDB), Agent Deployment (AWS Bedrock, Azure OpenAI, GCP Vertex AI), Memory Management (short-term & long-term), Human-in-the-loop Integration
Cloud Computing	Supercomputer, Certified AWS Cloud & AI Practitioner
Software Engineering & Design	Class Design, Code Analysis, Code Readability, Communication, Data Structures, Feature Design, Feature Proposal, Game Engine Technology, Object-oriented Design
Data Science & Analysis	Data Manipulation, Data Science, Data Visualization, Machine Learning, Web Scraping, Exploratory Data Analysis, Hypothesis Framing, Model Evaluation, Model Interpretation, Mathematical Modelling

CERTIFICATIONS >>

- AWS Certified Cloud Practitioner
- AWS Certified AI Practitioner
- Salesforce Tableau Desktop Foundations
- Salesforce Tableau Data Analyst
- [PCAP-31-03] PCAP™ – Certified Associate Python Programmer
- [PCPP-32-101] PCPP1 – Certified Professional Python Programmer Level 1
- Excel Skills Virtual Experience Program (JP Morgan Chase)

PROJECTS >>

OU RESEARCHER AT GALLOGLY COLLEGE OF ENGINEERING

Researcher 06/24 – 05/25

LLM based research project at the University of Oklahoma. Objective of this research, how to speed up LLMs' inferencing on constrained hardware using defined methods, math and validation.

- Self-learned and understood different Generative AI neural networks.
- Analyze Meta LLM, Ollama3, ChatRTX as a part of research.
- Learned PyTorch and build neural networks and transformers from scratch for GenAI.
- Utilized university's proprietary supercomputer to evaluate the hypothesis of research problems.
- Created a research paper that includes the results of my findings.

CAPSTONE PROJECT AUTOMATED DOCUMENTATION SYSTEM

Developer 08/23 – 12/23

Developed a document automation system to simplify creation, management, and customization of digital documents. Solved key challenges in automation and integrated user-centric features.

Technical Highlights

- Scalability and adaptability to various automation scenarios, implemented Ansible plugin.
- Used Confluence API to integrate Confluence with other tools, automate tasks, extract data, or extend its functionality.
- Python based integration for Ansible plugin and playbooks, command prompts, YAML, and JSON.
- Data that is generated is based on Ansible facts, which Ansible can retrieve or discover about certain information on remote systems or Ansible itself, which includes the operating systems, IP addresses, attached file systems and more.

Key Contributions

- Led the project planning and the implementation.
- Responsible for tracking the product progress.
- Implemented bi-weekly sprints that my team strictly adhered to, to meet deadlines.
- Python was used to connect the Ansible Playbooks and the Ansible Plugin.
- Developed and tested Python Code for connecting playbooks and Ansible plugin.
- Developed code in YAML to automate the creation of pages in Confluence.
- Performed unit testing in the development environment.
- Involved in peer code review.
- Integration testing near the end of development.

GitHub Repository

https://github.com/Doanh32/Capstone-Doc-Automation.git

SENIOR DATA ANALYTICS INTERN AT IGNAITE

Intern 01/24 – 06/24

Intern at a startup company called IgnAite. The purpose of the company is to identify critical challenges and make a positive impact within the financial industry. My goal as a senior data analytics intern was to identify a critical data problem within the industry by utilizing data analytics and creating storyboards to foster ideas for innovation.

- Worked internationally with colleagues throughout the internship.
- Delegated and taught colleagues how to effectively analyze the data.
- Utilized Oracle APEX and Node.js modules to link our data discoveries with the multiple teams in the company.

BRITISH AIRWAYS DATA SCIENCE JOB SIMULATION ON FORAGE - MAY 2025

- Completed a simulation focussing on how data science is a critical component of British Airways' success.
- Scraped and analysed customer review data to uncover findings.
- Built a predictive model to understand factors that influence buying behaviour.

BCG DATA SCIENCE JOB SIMULATION ON FORAGE - MAY 2025

- Completed a customer churn analysis simulation for XYZ Analytics, demonstrating advanced data analytics skills, identifying essential client data and outlining a strategic investigation approach.
- Conducted efficient data analysis using Python, including Pandas and NumPy. Employed data visualization techniques for insightful trend interpretation.
- Completed the engineering and optimization of a random forest model, achieving an 85% accuracy rate in predicting customer churn.
- Completed a concise executive summary for the Associate Director, delivering actionable insights for informed decision-making based on the analysis.

TATA DATA VISUALISATION: EMPOWERING BUSINESS WITH EFFECTIVE INSIGHTS JOB SIMULATION ON FORAGE - MAY 2025

- Completed a simulation involving creating data visualizations for Tata Consultancy Services
- Prepared questions for a meeting with client senior leadership
- Created visuals for data analysis to help executives with effective decision making

ELECTRONIC ARTS SOFTWARE ENGINEERING VIRTUAL EXPERIENCE PROGRAM ON FORAGE - MAY 2025

- Proposed a new feature for the EA Sports College Football and wrote a Feature Proposal describing it to other stakeholders.
- Built a class diagram and created a header file in C++ with class definitions for each object.
- Patched a bugfix and optimized the EA Sports College Football codebase by implementing an improved data structure.

LIBRARY TECH PLATFORMS AT UNIVERSITY OF OKLAHOMA

Student Library Technical Assistant 09/21 – 01/23

As a team member of Library Tech Platforms at The University of Oklahoma, I was responsible for installing software, providing maintenance for the library computers, etc. Worked on enterprise-level software that the University Library utilizes.

- Deployed numerous Windows PCs to Library Staff members.
- Well versed with Windows and macOS operating systems
- Experience with enterprise-level software such as Jamf and KACE
- Exposure to working on computer hardware.

HEXADECIMAL ARITHMETIC AND CONVERSION ASSEMBLY PROGRAM

Solo Project

Developed a functional assembly program capable of handling hexadecimal inputs, performing arithmetic operations, and displaying results, thereby solidifying foundational concepts in computer architecture and low-level programming.

Technical Highlights

- Showcased expertise in low-level programming, utilizing specific assembly language instructions for memory and register manipulation.
- Demonstrated ability to translate high-level arithmetic processes into machine-level code, including conditional branching, looping, and digit-wise operations.
- Employed structured and modular coding practices, ensuring readability and maintainability of the assembly code.
- Conducted thorough testing and debugging, optimizing the code for efficiency and reliability on the target computer architecture.

Key Responsibilities

- Implemented routines to capture and store user inputs in hexadecimal format, showcasing proficiency in handling user interactions at a machine level.
- Engineered algorithms to convert hexadecimal inputs to their decimal equivalents, demonstrating an understanding of number systems and their conversions.
- Devised and integrated an arithmetic module to perform addition of hexadecimal values after conversion to decimal, highlighting skills in implementing basic arithmetic operations in assembly language.
- Designed output functionality to display the arithmetic results in a user-friendly format, converting internal representations to ASCII codes for readability