ARK DUTT

+1 (608) 960-5020 | arksdutt@gmail.com | arkdutt.com | GitHub | LinkedIn

EDUCATION

Bachelor of Science in Computer Science and Data Science August 2021 - May 2025
University of Wisconsin-Madison | Minor in Economic Analytics

TECHNICAL SKILLS

Programming Languages: JavaScript, Java, Python, R, C/C++, C#, SQL, TypeScript, HTML/CSS, Swift
Frameworks/Libraries: Next.js, React.js, Node.js, Angular.js, Pandas, NumPy, Flask, .NET, MindAR
Databases and Tools: MySQL, MongoDB, PostgreSQL, Docker, Kubernetes, GitHub, Postman, Nginx
Concepts/Skills: Multi-Agent Systems, Generative AI, Data Structures & Algorithms, Full Stack Development, REST APIs, Microservices
AI/ML Frameworks: LangChain, LangGraph, Hugging Face Transformers, Keras, PyTorch, TensorFlow, Pydantic

WORK EXPERIENCE

Fullstack Developer | Mountain House Media, Rochester, NY August 2025 – Present
- Engineered **full-stack features** for a SaaS platform designed to help **creative professionals in media production** manage and track their ongoing projects, using **Next.js**, **Node.js**, **Express**, and **Python**; improved workflow efficiency by an estimated **30%**.
- Led the integration of **Generative AI capabilities**—including image and video generation, background removal, and upscaling—by developing and optimizing **Python-based microservices and APIs**, enhancing user productivity by **15%**.
- **Collaborated with stakeholders** to define technical requirements, prioritize feature roadmaps, and mitigate delivery risks, ensuring the platform's development aligned with user needs and creative workflows.

Software Developer | Wisconsin Center for Education Research, Madison, WI February 2024 - June 2025
- Designed and deployed **data integration and reporting pipelines** using **C#**, **SQL Server**, and **AWS**, improving real-time access to over **500+ records** and automating ETL workflows.
- Wrote optimized **SQL queries and stored procedures** to enhance analytical reporting, reducing query execution time by **40%**.
- Collaborated with analysts and developers to enhance data integrity, logging, and system performance.

Fullstack Developer | PBS Wisconsin, Madison, WI September 2024 - January 2025
- Led a team of **5 developers** to build and deploy an AR app using **React.js**, **Flask**, **MySQL**, and **MindAR**, integrating **300+ historical portraits** and increasing user engagement by **20%** with a seamless 3D experience.
- **Coordinated feature requirements with internal stakeholders** and translated them into technical specifications, ensuring alignment with organizational goals and maintaining **99.9% uptime** across platforms.

Machine Learning Researcher | Informatics Skunkworks, Madison, WI September 2024 - January 2025
- Built deep learning pipelines for processing **124+ RCC CT images** with **Python**, **PyTorch**, and **TensorFlow**, achieving a **5-10% improvement in AUC scores** and uncovering intra-patient similarities for predictive accuracy.
- Conducted **feature engineering, ETL, and SHAP-based analysis**, ensuring data integrity and explainability in ML pipelines.
- Automated data extraction and preprocessing workflows using **Python** and **SQL**, integrating heterogeneous medical datasets into a centralized **data warehouse** to streamline downstream model training and analysis.

Software Engineering Intern | TrustedNation, Chicago, IL May 2023 - August 2023
- **Gathered requirements from internal teams** to redesign corporate website using Next.js, improving frontend performance by 25% and streamlining user experience for **200+ monthly users**.
- **Communicated technical trade-offs** and migration strategies across teams, **reducing latency by 30%** while ensuring project goals were met.

Student Technology Trainer | Software Training for Students, Madison, WI November 2022 - January 2024
- Conducted over **100+ interactive workshops and individual sessions** on **Python**, **R**, **HTML**, **CSS**, and **JavaScript**, training **300+ students** and improving technical skill mastery rates by **75%** through practical, hands-on learning.
- Achieved an outstanding average instructor rating of **4.80/5** by delivering engaging, high-quality training sessions and creating comprehensive manuals, increasing course completion rates by **30%**.

PROJECTS

CodeBuddy | *Python, LangChain, LangGraph, Streamlit, Groq (OpenAI-compatible) API, Pydantic* October 2025
- Built an **AI coding agent** that autonomously generates full-stack applications from natural language prompts, streamlining end-to-end development using Python, LangChain, LangGraph, and the open-source Groq API **(OpenAI-compatible)**, achieving **90% task accuracy** across **25+ generated projects**.
- Developed a **Streamlit web interface and CLI tool** for dynamic, real-time code generation with secure file orchestration and Pydantic-based workflows, reducing build time to **under 45 seconds per project** and improving overall efficiency by **3×**.

FrameWork | *Python, FastAPI, Next.js, MongoDB, WebSockets, Google Gemini Pro, Pollinations.AI* November 2025
- Built a **multi-agent AI system** that converts natural language prompts into **screenplays, storyboards, and shot lists**, automating film pre-production end to end.
- Implemented a **sequential + looped agent pipeline** using **Gemini Pro APIs** for generation, **Pollinations.AI** for visual storyboards, and **FastAPI, MongoDB, and WebSockets** for orchestration, persistence, and real-time updates.

CERTIFICATIONS

- AWS Certified Cloud Practitioner **AWS**
- 5-Day AI Agents Intensive Course with **Google**
- Machine Learning Specialization by DeepLearning.AI
- Agentic AI by DeepLearning.AI