

# ARK DUTT

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## EDUCATION

**Bachelor of Science in Computer Science and Data Science**

August 2021 - May 2025

*University of Wisconsin-Madison | Minor in Economic Analytics*

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## TECHNICAL SKILLS

**Programming Languages:** Java, Python, R, C/C++, SQL, TypeScript, HTML/CSS, JavaScript, Swift

**Frameworks/Libraries:** Pandas, NumPy, Flask, Keras, TensorFlow, PyTorch, Next.js, React.js, Angular.js, .NET, MindAR

**Databases and Tools:** MySQL, MongoDB, PostgreSQL, Docker, Kubernetes, GitHub, Postman, Nginx, Slack, Jira

**Concepts/Skills:** Data Structures & Algorithms, Full Stack Development, REST APIs, Microservices, Web Security

**Relevant Coursework:** Computer Architecture, Discrete Math, Linear Algebra, Parallel & Throughput Programming

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## WORK EXPERIENCE

**Fullstack Developer | PBS Wisconsin, Madison, WI**

September 2024 - Present

- 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.
- Improved app scalability and optimized cross-device performance using **MindAR** and **Three.js**, reducing load times by **15%**, achieving **99.9% uptime**, and supporting 50+ monthly active users.

**Machine Learning Researcher | Informatics Skunkworks, Madison, WI**

September 2024 - Present

- 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 **SHAP analysis** and hyperparameter tuning with **GridSearchCV**, improving model accuracy by up to **12%** over **ResNet101**, refining interpretability and decision-making for tumor classification.

**Software Developer | Wisconsin Center for Education Research, Madison, WI**

February 2024 - Present

- Enhanced an educational platform using **C#, .NET**, and **SQL Server**, increasing satisfaction scores by **20%** and automating the scoring of **100+ tests daily**, reducing data processing time by **30%**.
- Worked with 6 team members to streamline database management and reporting workflows, **enabling real-time access to 500+ records**, improving data accuracy and decision-making.

**Software Engineering Intern | TrustedNation, Chicago, IL**

May 2023 - August 2023

- **Redesigned the corporate website** using **Next.js, JavaScript**, and **CSS**, improving frontend performance by **25%** through server-side rendering, code-splitting, and component optimization.
- **Migrated the frontend system to Next.js**, improving scalability and reducing latency by **30%**, while delivering a seamless user experience for over **200 corporate users** monthly.

**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%**.

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## PROJECTS

**SpeakStudy | Headstarter AI Hackathon Finalist | Node.js, Express, APIs**

April 2023 - August 2023

- Developed an **AI-powered website** with **Node.js/Express**, integrating **Gemini Pro 1.5** and **IBM Watson APIs**, handling **1000 interactions/month**.
- Enhanced learning accessibility by creating an **interactive AI tool**, improving user engagement by **40%** and increasing retention by **30%**, fostering deeper learning outcomes.

**HealthyIt | Java, Algorithms, OOP, Data Structures**

August 2022 - March 2023

- Built a **Java application** for users to search **Reddit posts** by keyword, optimizing the search algorithm to reduce retrieval time by **30%** and enhance accuracy, delivering faster results.
- Developed backend functionality to retrieve **20+ posts/day** matching user queries, improving search relevance by **40%** and reducing server load by **20%**, ensuring better scalability.

**Real Time Weather App | React.js, OpenWeatherMap API**

January 2022 - May 2022

- Developed a **real-time weather tracking website** using **React.js** and **OpenWeatherMap API**, serving **50+ daily users** with live weather updates and accurate data.

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## CERTIFICATIONS

- AWS Certified Cloud Practitioner, **AWS**
- Machine Learning Specialization by DeepLearning.AI,
- iOS & Swift - The Complete iOS App Development Bootcamp