

MD. MAHABUBUL HASAN AKASH

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SUMMARY — I am a Software Engineer with a Bachelor's degree in Computer Science and Engineering. My professional experience primarily involves leveraging python and machine learning technologies to create scalable software solutions. I am enthusiastic about tackling exciting challenges and solving complex software engineering problems.

TECHNICAL COMPETENCIES

Languages Python, JavaScript, Bash
Frameworks Django, FastAPI, Flask, React

ML Tools PyTorch, Scikit-Learn, Langchain, OpenCV
Technologies Linux, Docker, Git, Gh-Actions, Clickup

RECENT EXPERIENCE

Uhurutek Solutions

Software Engineer

Sept 2023 – Present

Responsibilities:

- Architected highly scalable back-end services using Python, FastAPI, and Django, resulting in fast response times and improved user experience.
- Implemented context-aware reasoning RAG applications using LangChain and Llama index.
- Developed and deployed on-premise chatbots utilizing NLP frameworks, increasing customer engagement and reducing support tickets.
- Streamlined deployment processes by containerizing applications with Docker, resulting significant reduction in deployment time and improved application uptime.
- Collaborated effectively with an agile team to prioritize feature requests, refine user stories, and ensure code quality. Utilized project management tools like ClickUp and GitHub Projects to improve team collaboration and deliver projects on time and within budget.

Adorsho Pranisheba

A platform for cattle identification, wellbeing monitoring, farm management, insurance, loan and veterinary services.

Software Engineer

Jan 2023 – Oct 2023

Responsibilities

- Implemented RESTful back-end services using Django and Django Rest Framework, prioritizing clean code to meet business needs.
- Developed new features, fixed existing bugs, and refactored the codebase. Collaborated with front-end developers to provide tailored APIs aligned with project specifications.
- Developed and deployed state-of-the-art machine learning models into a robust cattle monitoring platform, enabling cattle insurance and funding opportunities for end customers.
- Implemented a secure investing module for a shared-farming model, integrating payment gateways.
- Actively participated in daily stand-up meetings, fostered idea sharing, and contributed to productive review sessions.

Software Engineer Intern

Oct 2022 – December 2022

Responsibilities

- Developed web applications and robust back-end services using Django, Django Rest Framework, and React.
- Performed bug fixing and implemented new features to enhance system functionality.
- Actively participated in meetings, code reviews, and training sessions to foster collaboration and stay updated with best practices and emerging technologies.

EDUCATION

American International University Bangladesh

Apr 2018 - Apr 2023

Bachelor of Science in Computer Science & Engineering

Minors: Machine Learning, Computer Vision & Pattern Recognition

CGPA: 3.59/4

Birsreshtha Noor Mohammad Public Collage

Jun 2015 - May 2017

Higher Secondary School Certificate

GPA: 4.44/5

Momena Ali Biggan School

Jan 2010 - Feb 2015

Secondary School Certificate

GPA: 5/5

EXTRACURRICULAR ACTIVITIES

AIUB Robotic Crew

Aug 2021 – Apr 2023

Software Team Lead

- Led the software team for the International Rover Challenge and other competitions, overseeing development efforts, coordinating tasks, and ensuring project success.
- Engaged in project showcasing and outreach activities, promoting the club's projects and achievements.

Programming Contests

- Cultivated problem-solving and DSA expertise (400+ challenges, Codeforces/other OJ's) & participated in ICPC regional/university contests.

PROJECTS

1. UhuruChat — Uhurutek Solutions

Description: Build chatbots with domain-specific knowledge for various use cases, such as business applications.

Technologies: Python, FastAPI, Langchain, LlamaIndex, OpenAI, Pinecone, PostgreSQL, Celery, BS4, Docker, Jenkins, Apache

APISIX

Contributions:

- Designed UML prototypes and System Landscape, resulting in a 15% reduction in development time and a significant decrease in errors identified during coding.
- Developed the RAG platform from scratch, which streamlined the development process and improved overall project efficiency
- Implemented Docker with APISIX, achieving significant increase in API throughput for scalable and efficient API management
- Developed a custom crawling and scraping module along with a data wrangling pipeline. This automated the process of collecting data from user-specified websites relevant to LLM contexts.

2. Pranisheba Heard Management System (Backend Service) — Adorsho Pranisheba

Description: HMS is designed for farmers, investors and agents to provide end to end solutions using state of the art technologies

Technologies: Python, Django, Django Rest Framework, MySQL, Celery, Redis, PyTorch, Docker, Jenkins

Contributions:

- Developed API's for cattle identification using a custom-trained machine learning model. This enabled efficient and accurate identification of cattle, potentially leading to insurance and improved herd management.
- Implemented new features and fixed existing bugs
- Worked with ML dev's to deploy and integrate the models
- Improved Docker and Docker Compose and Integrated Jenkins for automated deployment.

4. Pranisheba Shared Farming (CMS, Backend)— Adorsho Pranisheba

Description: Shared Farming is a crowdfunding platform that matches up urban investors with marginal farmers.

Technologies: Python, Django CMS, Django Rest Framework, Celery, Redis, MySQL, JavaScript, HTML, CSS, Docker, Jenkins

Contributions:

- Developed the investment module integrating payment gateways.
- Developed Django CMS plugins for easy customization.
- Implemented Docker, Docker Compose and Jenkins for CI.
- Deployed the project in Digital Ocean Using NGINX as reverse proxy.

4. Pranisheba Prohori (Backend Service) — Adorsho Pranisheba

Description: An IoT-based Remote Cowshed Monitoring System that provides 24/7 surveillance of cowsheds.

Technologies: Python, Django Rest Framework, JavaScript, Celery, Redis, RabbitMQ, NoSQL, Docker, Jenkins

Contributions:

- Developed MQTT pub/sub service to collect live data from iot devices.
- Wrote periodic tasks using celery.
- Fixed bugs and refactor codebase.

5. Cattle weight estimator (Backend Service) — Adorsho Pranisheba

Description: App to measure cattle weight using pictures

Technologies: Python, Django Rest Framework, OpenCV, MySQL, Docker, Jenkins

6. ShurjoPay Plugin/SDK (Libraries) — ShurjoMukhi Ltd

Description: ShurjoPay plugins for .NET and Python frameworks to ensure seamless payment integration for developers

Technologies: Python, C#

6. Mars Rover Navigation System – AIUB Robotic Crew

Description: This project integrates manual-autonomous traversal system & control system for a mars rover.

Technologies: C++, Python, ROS, Linux, TensorFlow, AR-Tags, rtk-lib, OpenCV, ubiquti networks, Arduino

REFERENCES

Name: Chowdhuriy Akram Hossain

Position: Associate Professor, Head of Computer Engineering

Organization: American International University Bangalesh

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Name: Safayet Khan

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Name: Mahmudul Hasan

Position: Senior Software Engineer

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