A.B.M Hasan-UL-Banna

Software Engineer

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📍 Dhaka, Bangladesh

SKILLS

Programming Language (Python, Java, JavaScript)

Frameworks (Django, Django REST Framework, AWS SAM, PyTorch, pandas, LangChain, VueJS)

Databases (PostgreSQL, MongoDB, Redis, DynamoDB, Opensearch) | **Cloud Platforms** (AWS, GCP)

Tools (Postman, Celery, ActiveMQ, Nginx, Gunicorn, Amazon Lambda, S3, GitHub Actions, Ubuntu)

Practices (Agile Methodologies, Test-driven development)

EDUCATION

Bachelor of Science (B.Sc.) in Computer Science and Engineering   2018 – 2022 | Dhaka, Bangladesh
Brac University
CGPA: 4.00 out of 4.00 | Highest Distinction | VC's List | Dean's List

Secondary School Certificate   2015 | Dhaka, Bangladesh
Motijheel Ideal School and College
GPA: 5.00

PROFESSIONAL EXPERIENCE

Software Engineer   01/2023 – present | Dhaka, Bangladesh
BracIT Services Limited

PROJECTS

Digital Field Application(DFA)   2023 – present

Contributed to the development, enhancement, and maintenance of a comprehensive system for managing microfinance solutions across multiple African countries for BracIT Services Limited.

Key responsibilities and achievements:

- Developed multiple features and modules, including an AgriFinance management system to streamline loan processes for agricultural businesses and farmers.
- Facilitated seamless data exchange by developing modules to send data to and consume data from third-party clients and partners.
- Incorporated comprehensive logging mechanisms and stored logs in a MongoDB database for efficient log management and analysis.
- Integrated background task processing using Celery for periodic data processing, enabling automated data consolidation and analysis.
- Implemented rate-limiting mechanisms and caching strategies to optimize performance, security, and efficiency.
- Refactored and upgraded the existing codebase to the latest version, improving maintainability, readability, and scalability.
- Deployed the application to production servers using Nginx and Gunicorn, ensuring high availability and scalability.
- Automated data backups using cron jobs, ensuring data integrity and disaster recovery preparedness.
- Integrated application APIs with frontend technologies such as Vue.js to build user-friendly interfaces.

Technologies: Python, Django, Django REST Framework, Celery, Redis, ActiveMQ, PostgreSQL, MongoDB, Nginx, Gunicorn, VueJS, etc.

confiGOAT 🔗 2023 – present

Developed an open-source Python library, confiGOAT, to streamline the management of application configurations and environment variables.

Key contributions:

- Designed and implemented a flexible and user-friendly configuration management system that supports hierarchical configurations, configuration merging, type validation, and environment-specific settings.
- Incorporated features for defining configurations using YAML files, Python scripts, or a combination of both, enabling robust and scalable configuration management for projects of varying complexities.
- Implemented a powerful reference mechanism that allows reusing variables across different levels of the configuration hierarchy, promoting code reusability and maintainability.
- Integrated support for dynamic module imports, enabling seamless access to configuration variables throughout the application codebase using standard Python import mechanisms.
- Authored comprehensive documentation, including installation instructions, usage examples, and detailed explanations of different configuration types and referencing techniques.
- Ensured code quality by implementing unit tests, achieving 100% code coverage, and adhering to continuous integration and deployment practices.
- Utilized Python's typing module to enforce type safety and improve code maintainability.
- Actively maintained the project, addressing issues reported by the community, and continuously enhancing the library's functionality based on user feedback.

Technologies: Python, YAML, pytest

Ambient Assisted Living System for Alzheimer's Patients 2022

Developed an intelligent ambient assisted living system to enhance the safety and well-being of individuals with Alzheimer's disease. The system leverages cutting-edge machine-learning techniques for object detection, recognition, and facial analysis.

Key contributions:

- Implemented state-of-the-art object detection models, including YOLOv4 and YOLOv7, to accurately identify and localize objects within the environment, enabling real-time monitoring and analysis.
- Integrated facial recognition capabilities using FaceNet and MTCNN models, allowing the system to recognize familiar individuals and provide contextual information to Alzheimer's patients.
- Employed Random Forest and Support Vector Machine (SVM) classifiers for robust face classification and identification of known individuals.
- Developed a comprehensive danger object recognition system to detect and alert caregivers or responsible parties about potential hazards within the patient's vicinity.
- Created custom datasets for object and facial recognition, annotating and curating a diverse range of images to train the machine learning models effectively.

Technologies: Python, PyTorch, OpenCV, YOLOv4, YOLOv7, FaceNet, MTCNN, Random Forest, SVM, Data Annotation Tools.

CERTIFICATES

Machine Learning on Google Cloud 🔗
Coursera

CS50's Introduction to Programming with Python 🔗
CS50, Harvard University