Arafat **Hasan**

Software Engineer · Continuous Learner

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"You become what you give your attention to."

Summary

I am a software engineer with 4 years of experience building efficient and reliable systems, supported by a strong background in competitive programming with extensive problem-solving expertise. My experience spans backend engineering, DevOps, and machine learning, including work on classification, recommendation, and document review systems. I thrive on tackling complex challenges with clarity, exploring big ideas, and staying curious about everything while pursuing technical excellence with intellectual depth.

Work Experience

Dynamic Solution Innovators — *Dhaka, Bangladesh*

Software Engineer (Client: Consilio LLC, USA – Envize Development Team) — *March 2022 – Present*

- Contributed to the architecture and development of Envize, Consilio's large-scale document classification and Technology-Assisted Review (TAR) platform powering enterprise eDiscovery workflows.
- Developed and maintained multiple core production systems across backend, ML, and frontend layers:
  - Implemented ML-driven document similarity and classification pipelines in **Python** using Gensim, NumPy, and SVMs; optimized processing pipelines to handle millions of documents at scale.
  - Developed high-throughput backend middleware services in **Java (Spring Boot)**, integrating ML systems with external enterprise platforms and ensuring reliable, low-latency APIs under heavy workloads.
  - Hardened the Next.js frontend for production, introducing logging, configuration management, and scalable backend API communication patterns to support reliable enterprise workflows.
- Led cross-service performance optimization initiatives, reducing latency and improving system stability under high-volume, concurrent processing.
- Designed and maintained Jenkins-based CI/CD pipelines, automated deployments, and strengthened DevOps workflows to improve release reliability and developer velocity.
- Actively participated in architecture reviews, long-term system design decisions, and product roadmap planning, influencing platform evolution beyond immediate feature delivery.
- Collaborated across distributed, multi-time-zone teams, resolving production issues, improving operational resilience, and driving end-to-end system efficiency.

MATs Inc. — *Texas, United States*

Software Engineer, Intern (Remote) — *July 2018 – September 2018*

- Worked in a four-member engineering team, contributing to data acquisition and automation tasks.
- Contributed to the initial development of a stock market recommendation system, sourcing high-quality financial data from NASDAQ and other market sources via scraping and APIs.
- Built web crawlers and scrapers using Python (Scrapy) and Java Selenium WebDriver to extract structured and unstructured data from diverse sites.
- Performed automated testing using Selenium, validating site functionality.
- Gained hands-on exposure to Jenkins, participating in early CI/CD workflow setup.

Skills & Technologies

Programming Languages	Python, Java, Go, C/C++, Bash, SQL
Frameworks & Libraries	Spring Boot, FastAPI, Flask, Chi (Go), Next.js, Hibernate, Selenium
Domain Expertise	Large-Scale Document Review & Classification Systems, Recommendation Systems, Information Retrieval
DevOps & Tooling	Linux, Docker, Jenkins, GitHub Actions, CI/CD, Git, Maven, Vim, Travis CI
ML & Data Processing	Scikit-Learn, Gensim, NumPy, Pandas, PyTorch, TensorFlow, OpenCV, Matplotlib
Databases	PostgreSQL, MSSQL, SQLite, MongoDB
Languages	English (Fluent), Bengali (Native)

Education

Mawlana Bhashani Science and Technology University — *Tangail, Bangladesh*

B.Sc. in Computer Science and Engineering — *Jan 2016 – Sep 2021*

Projects

auth1 *Modular Authentication Service*

/arafat-hasan/auth1 *Go*

- Lightweight, production-ready authentication service with a clean layered architecture.
- Implements secure JWT-based access/refresh tokens with robust rotation and validation logic.
- Strong input validation, structured logging (Logrus), and configuration management via Viper.
- Designed for seamless integration across multiple backend services and scalable deployment.

LexiClass *Document Classification Toolkit*

/arafat-hasan/LexiClass *Python*

- Production-ready document classification framework with a modular, protocol-based plugin architecture.
- Ships with 11+ built-in plugins (tokenizers, feature extractors, classifiers) and supports easy custom plugin development.
- Supports end-to-end workflows—indexing, training, prediction, evaluation—with both CLI and Python library usage.
- Streaming index builder for large datasets with token caching for high performance and low memory usage.
- Designed for fast prototyping, scalable ML pipelines, and integration into real-world services.

Problem Solving

/arafat-hasan/problem-solving

- **Codeforces:** Handle: arafat_hasan, Max Rating: 1434, specialist, 300~ problems solved
- **HackerRank:** Username: arafat_hasan, C++: *Gold level*, Problem Solving: *Silver level*
- **CodeChef:** Username: arafat_hasan, Current 1470, Peak 1552
- **LeetCode:** Username: arafat_hasan, 220~ problems solved
- **UVa:** Username: 859424, 370~ problems solved
- **Other Platforms:** Occasionally practiced on AtCoder, SPOJ, LightOJ
- **National Level On-site Contest:** 15+ national inter-university contests (BUET, IUT, JU, MBSTU, others)
- **Intra University Onsite Contest:** 35+ intra-university contests
- **Cumulative Experience:** 1500+ algorithmic problems solved across major online judges
- **Contests Participated:** 300~ online contests participated
- **Training:** BACS KUET Programming Training Camp 2017

Publications

Intelligent waste management system using deep learning with IoT *10.1016/j.jksuci.2020.08.016*

Journal of King Saud University – Computer and Information Sciences, 34(5), 2072–2087. *May 2022*

- Led core ML and system design work for a research project that integrates deep learning with IoT for smart waste classification and management.
- Proposed a CNN-based model achieving 95.31% accuracy in classifying degradable vs. non-degradable waste.
- Designed a smart trash-bin prototype using IoT sensors (microcontroller + multiple sensors) for real-time monitoring and data communication via Bluetooth.
- Conducted a System Usability Scale (SUS) evaluation, achieving a score of 86, demonstrating high usability.

Community Involvement

Competitive Programming Trainer *Tangail, Bangladesh*

Competitive Programming Club, CSE, MBSTU *March 2019 – Feb 2022*

- Conducted regular training sessions on algorithms, data structures, and problem-solving.
- Trained students for ICPC and national competitive programming contests.
- Organized specialized workshops and guided students through structured practice.
- Monitored student progress and provided targeted feedback to improve performance.