

# Kazal Chandra Barman

Lead Software QA Engineer – AI/ML, Web, and Automation Focus

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## Professional Summary

Lead QA Engineer specializing in AI/ML and automation with over 5 years of proven experience in designing scalable test frameworks and improving model performance. Skilled in driving quality across the software lifecycle, empowering teams, and optimizing processes to deliver high-impact results. Proven ability to reduce manual testing efforts by 60% and increase release stability by 40%.

## Core Competencies

- **QA Leadership & Strategy:** End-to-end QA process design, test strategy development, test planning, team leadership & mentoring, cross-functional collaboration, QA process optimization, risk assessment & mitigation.
- **Specialized Testing Domains:** AI/ML system testing, OCR pipeline validation, NLP model testing, computer vision QA, multilingual system testing, performance benchmarking.
- **Automation Excellence:** Test framework architecture, CI/CD pipeline integration, test automation strategy, scalable test suite design, DevOps integration, quality metrics implementation.
- **Business Impact:** 60% manual testing reduction, 30% performance improvement, 40% release stability enhancement, cost-effective QA solutions, ROI-driven testing strategies.
- **Project Management:** Agile/Scrum implementation, sprint planning & execution, stakeholder management, resource allocation, timeline management, quality assurance governance.
- **Innovation & Research:** Emerging technology testing, R&D project coordination, prototype validation, technology evaluation, best practice development, industry trend analysis.

## Notable Achievements

- Designed scalable automation pipelines that reduce manual quality assurance efforts by more than 60% across multiple AI-driven platforms.
- Managed QA strategy for the web-based image and text annotation tool serving 40 annotators and 3 ML teams with 40% improvement in release stability.
- Improved the response time of the OCR system by 30% through comprehensive load testing and performance profiling.
- Developed end-to-end automation frameworks for OCR pipelines supporting Bangla, English, and Japanese.
- Successfully managed QA for the Virtual Tryon application validating 2D body mapping and gesture interaction.
- Integrated automated testing into CI/CD pipelines, reducing deployment time and increasing code quality.

## Professional Experience

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**Next Solution Lab, Dhaka, Bangladesh**

*Dec 2023 – Present*

**Lead AI Test Engineer**

- Lead comprehensive **QA strategy and execution** across AI-driven platforms, AI chatbots, AI Agent and MVPs, ensuring smooth and stable product releases in rapid sprint cycles.
- Deliver robust end-to-end testing for **Virtual Tryon** application, validating 2D body mapping accuracy, virtual try-on functionality, and camera-based hand gesture interaction.
- Execute comprehensive testing for **Car Selling E-commerce** platform, covering UI/UX flows, REST API validation, and database integrity.
- Mentor 5 QA engineers and establish best practices for web and AI system testing methodologies.

**Next Solution Lab, Dhaka, Bangladesh**

*Jun 2022 – Nov 2023*

**Senior AI Test Engineer**

- Automated multilingual document OCR QA for CRNN/MaskRCNN pipelines, reducing validation time by 70%.
- Implemented bounding box layout validation techniques, cutting manual verification time by 70% and improving accuracy.
- Executed extensive load testing and performance profiling using JMeter and Locust, improving OCR response time by 30%.
- Collaborated cross-functionally on micro-services QA with AWS cloud services (EC2, Lambda, API Gateway) and Dockerized AI workflows.
- Designed and implemented test automation for selection-based template matching system with advanced validation protocols.

**Next Solution Lab, Dhaka, Bangladesh**

*Mar 2021 – May 2022*

**AI Test Engineer**

- Delivered comprehensive QA for internal annotation management tool (Annotex) supporting computer vision/NLP datasets, serving 50+ annotators and 3+ ML teams.
- Validated micro-services architecture for multilingual NLP and computer vision tasks with focus on data integrity and system reliability.
- Developed comprehensive API regression test collections and integrated them with GitLab CI for automated validation.
- Implemented quality metrics tracking and reporting systems for continuous improvement.

**Next Solution Lab, Dhaka, Bangladesh**

*Feb 2020 – Feb 2021*

**AI Project Coordinator**

- Oversaw QA coordination for computer vision and NLP-based demos and annotation prototypes in R&D environment.
- Managed data preparation, test coverage planning, and user acceptance reviews for research projects.
- Coordinated with ML teams to establish testing protocols for experimental AI models and systems.
- Developed documentation and standard operating procedures for prototype testing workflows.

**Semantics Lab, Rangpur, Bangladesh**

*May 2018 – Feb 2020*

**AI Researcher and Developer**

- Tested and validated OCR and NLP systems for Bengali and English data pipelines with focus on accuracy and performance.
- Conducted research and development on machine learning model optimization and validation methodologies.
- Contributed to test design and performance benchmarking for state-of-the-art NLP and computer vision models.

## Professional Skills

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**Testing Types:** Functional Testing, Regression Testing, Integration Testing, User Acceptance Testing, Performance Testing, Security Testing, API Testing, Database Testing, Cross-browser Testing, Mobile Testing, Accessibility Testing

**Automation Tools:** Selenium WebDriver, Cypress, Playwright, Appium, PyTest, JUnit, TestNG, Robot Framework

**Performance & Security:** JMeter, LoadRunner, SQL Injection Testing, XSS Testing, OWASP Security Testing, Vulnerability Assessment

**Programming Languages:** Python, JavaScript, Bash Scripting, HTML/CSS, PHP, SQL

**API Testing:** Postman, REST Assured, SOAP UI, GraphQL Testing, JSON Schema Validation

**CI/CD & DevOps:** GitLab CI/CD, GitHub Actions, Jenkins, AWS CodeCommit, Docker

**AI/ML Testing:** TensorFlow, Keras, Scikit-Image, NumPy, Pandas, LangChain, Rasa, DeepEval, OpenCV

**Database Testing:** MySQL, PostgreSQL, MongoDB, Database Validation, Data Integrity Testing

## Core Strengths

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**Leadership & Mentoring:** Led a QA team of 5 engineers, improving delivery timelines by 20% through best practice adoption.

**Analytical Problem Solving:** Identified critical system issues early, reducing production defects by 15%.

**Quick Learning:** Rapidly mastered new AI/ML testing tools and integrated them into test pipelines within weeks.

**Communication:** Facilitated effective collaboration between QA, development, and product teams, enhancing project clarity.

**Stress Management:** Delivered high-quality results under tight deadlines and in high-pressure environments consistently.

## Education

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**Bachelor of Science in Computer Science and Engineering**

**Begum Rokeya University, Rangpur**

2012 – 2016

**CGPA:** 3.22

**Key Project:** Developed a facial key-point detection system for safe driving, improving driver alertness monitoring.

## Certifications

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- Google Project Management Certificate, Coursera (2024) – Applied agile project management to streamline QA workflows.
- Python for Data Science and Machine Learning, Coursera (2023) – Enhanced AI/ML test pipelines.
- Web Scraping with Python and BeautifulSoup, Coursera (2023) – Automated data extraction for testing.
- Front-End Development Libraries, FreeCodeCamp (2022) – Built UI test suites.

## Languages

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- Bangla: Native
- English: Fluent