Jahidul Islam

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Professional Summary

AI-focused Computer Science graduate specializing in AI agent and Chatbot development and LLM-based agentic systems. Hands-on experience building ReAct and CodeAct agents for competition-level code generation, automated reasoning, and multi-step task execution. Proficient in Python (LangChain, LangGraph, DSPy), RAG architectures, and agent orchestration frameworks. Demonstrated success in developing intelligent agents that leverage tool use, chain-of-thought reasoning, and action planning. Passionate about advancing autonomous agent capabilities and building production-ready AI systems that solve complex real-world problems.

Education

B.Sc. in Computer Science and Engineering *(Expected Jan 2026)*
Green University of Bangladesh
- CGPA: 3.50/4.00 (1 Semester remaining)

Thesis & Research

Optimizing Retrieval-Augmented Generation (RAG) Models
Researching RAG optimizations for knowledge graphs, focusing on improved retrieval pipelines and embeddings to enhance temporal reasoning and answer accuracy. Supervised by **Professor Dr. Md. Saiful Azad** ↗, Dean, Faculty of Science and Engineering (FSE), Green University of Bangladesh.

Publications

PyBangla at BLP-2025 Task 2: Enhancing Bangla-to-Python Code Generation with Iterative Self-Correction and Multilingual Agents ↗
Under Review, BLP Workshop @ AACL-IJCNLP 2025 (A* Conference)
Jahidul Islam, et al.
Paper explores iterative self-correction mechanisms and multilingual agent frameworks for improving Bangla-to-Python code generation tasks.

Experience

AI Agent Developer (Research & Development) *(2025 – Present)*
Independent Research Projects
- Developed ReAct (Reasoning + Acting) agents for autonomous problem-solving using LangChain and LangGraph, implementing tool-calling workflows with chain-of-thought reasoning for multi-step task execution
- Built PyBanglaCodeAct agents for competition-level code generation, achieving automated solution generation for algorithmic problems through iterative refinement and execution feedback loops
- Created automated research paper evaluation pipeline: PDF text extraction, LLM-based analysis for novelty/quality/contribution assessment, structured CSV output generation, and intelligent reviewer assignment using OpenAI API
- Designed and implemented agent orchestration systems with custom tool integrations, memory management, and state tracking for complex reasoning chains
- Optimized agent performance through prompt engineering, retrieval strategies, and dynamic tool selection.
- Integrated multiple LLM backends (OpenAI, Anthropic, open-source models via vLLM) with fallback strategies and cost optimization

Organizing Secretary *(2025 – Present)*
IEEE CSB Chapter, Green University of Bangladesh
- Lead planning and execution of technical events, workshops, and seminars to engage the student community.
- Coordinate with executive members to ensure smooth event operations and active member participation.

Membership Development Coordinator *(2024 – 2025)*
IEEE Student Branch, Green University of Bangladesh
- Managed membership recruitment and retention initiatives, increasing active participation.
- Developed strategies to promote IEEE activities and attract new members.

Assistant Marriage Registrar & Kazi *(2021 – 2025)*
Office Daudkandi Pourashava (4, 5 & 6 Ward), Daudkandi, Cumilla
- Assisted in official document processing related to marriage registration.
- Maintained accurate marriage registers and records. Supported various administrative and legal formalities related to matrimonial affairs.

Skills

AI Agent Development: ReAct Agents, CodeAct Agents, Tool-calling Workflows, Agent Orchestration, Multi-Agent Systems, Autonomous Task Execution

LLM & AI Frameworks: LangChain, LangGraph, DSPy, vLLM, Prompt Engineering, Chain-of-Thought Reasoning, Function Calling, RAG (Retrieval-Augmented Generation)

Programming: Python, C++, Java, SQL (MySQL), JavaScript, PHP

Python Libraries: NumPy, Pandas, Scikit-learn, Hugging Face Transformers, OpenAI API, Anthropic API, PyPDF2

Machine Learning & AI: LLMs (GPT, Claude, Open-source models), Model Inference (vLLM), Knowledge Graphs, Embedding Models, Vector Databases, Fine-tuning

Web Development: Django, Laravel, HTML, CSS, JavaScript

Tools & Technologies: Git, GitHub, Docker, REST APIs, JSON, CSV Processing, Linux

Soft Skills: Problem Solving, System Design, Research, Technical Communication, Team Collaboration, Adaptability

Projects

Automated Research Paper Evaluation & Reviewer Assignment System
- Built end-to-end LLM-powered pipeline for automated conference paper review and evaluation from PDF files
- Implemented PDF text extraction and preprocessing module for academic paper parsing
- Designed advanced prompt engineering strategies to extract structured assessments: novelty, format quality, contribution, and overall paper quality from LLM responses
- Created multi-column CSV export system for systematic evaluation data management and analysis
- Developed intelligent reviewer assignment algorithm using LLM-based keyword/domain extraction and criteria-based matching
- Integrated OpenAI API with optimized rate limiting, error handling, and structured output parsing
- Achieved consistent structured responses through careful prompt design and JSON schema validation

Competition-Level PyBanglaCodeAct Agent System *github.com/jahidulzaid/ PyBanglaCodeActAgent* ↗
- Developed autonomous coding agent using CodeAct architecture for competitive programming problem-solving
- Implemented iterative code generation, execution, debugging, and refinement loops with LLM-powered reasoning
- Integrated code execution sandbox, test case validation, and error feedback mechanisms
- Achieved successful automated solution generation for algorithmic challenges using Python and LangChain
- Incorporated ReAct-style reasoning traces for transparent decision-making and action planning

Shared Task 2 – BLP Workshop 2025 *blp-workshop.github.io/ sharedtasks* ↗
- Ranked top 10 in dev phase and 17th in test phase for Bangla Language Processing (BLP) Workshop 2025
- Built bilingual (Bangla-English) LLM agent system for complex text understanding and generation tasks
- Implemented agentic workflows with Hugging Face Transformers, LangChain, and custom prompt strategies
- Designed multi-step reasoning pipeline for improved accuracy in low-resource language processing

Open-Source LLM Chatbot with Node.js *[github.com/jahidulzaid/ OpenLLM-Chatbot](https://github.com/jahidulzaid/OpenLLM-Chatbot)*

- Node.js-based conversational chatbot with open-source LLM models (Llama, Mistral)
- REST API architecture with context-aware conversation management and real-time WebSocket support

CodeCraft-Academy (Learning Platform) *[github.com/jahidulzaid/ CodeCraft-Academy](https://github.com/jahidulzaid/CodeCraft-Academy)*

- Laravel-based platform for interactive programming learning
- Role-based access, quiz system, progress tracking
- Multi-language course support with Online Judge

Advanced E-Commerce Online SuperShop *[github.com/jahidulzaid/ Advance-Online- SuperShop](https://github.com/jahidulzaid/Advance-Online-SuperShop)*

- Responsive Laravel-based e-commerce platform
- Features: user login, cart, orders, admin panel
- Implemented secure routing and dynamic content rendering

Intrusion Detection System (IDS) *[github.com/jahidulzaid/ IDS-with-CLI-for-any- Datasets](https://github.com/jahidulzaid/IDS-with-CLI-for-any-Datasets)*

- CLI-based Python project using machine learning
- Detects anomalies in datasets and rule-matching

CLI-Based Search Engine *[github.com/jahidulzaid/CLI- Search-Engine](https://github.com/jahidulzaid/CLI-Search-Engine)*

- C++ implementation using Trie and Hashing
- Supports prefix, exact, and KMP substring search

Language Proficiency

Bangla: Fluent (Reading, Writing, Speaking)
English: Fluent (Reading, Writing, Speaking) – WSDA (New Zealand) Certified

References

Professor Dr. Md. Saiful Azad, PhD ↗
Dean, Faculty of Science and Engineering (FSE)
Professor, Department of Computer Science and Engineering
Green University of Bangladesh
Email: saiful@cse.green.edu.bd

Md. Ataullha ↗
Lecturer, Department of Computer Science and Engineering,
Ex-AI Engineer at Synesis IT PLC
Green University of Bangladesh
Phone: +880 1879-093418
Email: ataullha@cse.green.edu.bd

Training & Certifications

- Certificate — Python with Django (EDGE - ICT Division)
- Certificate — PHP with Laravel (BASIS-BITM)
- IEEE Membership (2024, 2025)
- 1st Runner-Up — IT Olympiad, GUB CSE Carnival 2024

Extracurricular Activities

Active competitive programmer, event organizer (IEEE GUB, CSE Carnival 2024, STI 2024), attended national/international webinars, coding contests, and workshops.