Jahidul Islam

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🔗 jahidulzaid.github.io   in jahidulzaid   ○ jahidulzaid

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)

Higher Secondary Certificate (Science)   *2019*
Barkota H/S College, Comilla Board
- GPA: 5.00/5.00

Secondary School Certificate (Science)   *2017*
Lalpur Nazrul Islam High School, Comilla Board
- GPA: 4.95/5.00

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 ☑
Accepted (6-11-2025), BLP Workshop @ AACL-IJCNLP 2025 (A Conference)*
Jahidul Islam, Md Ataullha, Saiful Azad.

Speculative ReActRAG: Hybrid Multi-Perspective Retrieval-Augmented Generation with Structured Validations.
Under Review at IEEE

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 output, and 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 — IEEE Computer Society SB Chapter, Green University *(March 2025 – Present)*
Membership Development Coordinator — IEEE SB, Green University *(Jan 2024 – Feb 2025)*
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, 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, Design, Research, Technical Communication, Team Collaboration, Adaptability

Projects

Automated Research Paper Evaluation & Reviewer Assignment System

- ○ Built end-to-end LLM-powered pipeline for 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

- ○ 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

Agentic RAG Chatbot *github.com/jahidulzaid/ Agent-ChatBot* ↗

- ○ Conversational chatbot with open-source LLM models and context-aware conversation management

CodeCraft-Academy (Learning Platform) *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

E-Commerce App: SuperShop   *ijahidul-shop.wasmer.app* ↗
  - 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* ↗
  - CLI-based Python project using machine learning
  - Detects anomalies in datasets and rule-matching

CLI-Based Search Engine   *github.com/jahidulzaid/CLI-*
                                                                Search-Engine ↗
  - C++ implementation using Trie and Hashing
  - Supports prefix, exact, and KMP substring search

Training & Certifications

|	
Certificate — Python with Django (EDGE - ICT Division)	*(July 2025)*
Certificate — PHP with Laravel (BASIS-BITM)	*(August 2023)*
1st Runner-Up — IT Olympiad, GUB CSE Carnival	*(2024)*

Extracurricular Activities

  - Active participant in university programming contests and hackathons
  - Solved 500+ competitive programming problems on platforms like Codeforces (@jahidulzaid ↗), Beecrowd, VJudge (@jahidulzaid ↗), HackerRank, and LeetCode
  - Volunteer for technical workshops and coding bootcamps at Green University
  - Member, Green University Computer Club (GUCPC)
  - Organized and hosted AI/ML study groups and peer learning sessions
  - Contributor to open-source projects and online coding communities
  - Engaged in community outreach for STEM education and digital literacy

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
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Md. Ataullha ↗
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