

Ashraful Islam

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EDUCATION

University of Alabama at Birmingham

Master of Science in Computer Science, GPA: 3.80/4.00

Alabama, USA

Jan 2022 - Dec 2024

Leading University

Bachelor of Science in Computer Science and Engineering, GPA: 3.30/4.00

Sylhet, Bangladesh

Aug 2009 - Aug 2013

EXPERIENCE

University of Alabama at Birmingham

Graduate Research Assistant

Alabama, USA

Jan 2022 - Aug 2024

- Led a team of three to develop Brouhaha (Research Compiler), achieving significant performance improvements through flow-directed inlining based on control-flow analysis (CFA) and advanced local optimizations. [Github]
- Developed a functional compiler in Racket to translate a minimal Racket-like language into equivalent C++ code, producing identical runtime outputs. [Github]
- Deployed and managed Docker containers with CMake-based builds to streamline development environments, ensuring cross-platform compatibility across Linux, Windows, and Mac OS.
- Reviewed over 120 papers on Functional Compilation and Functional Program Analysis, summarizing insights from top journals (POPL, PLDI, ICFP) in a 30-page report. [Link]

Bangla Search Engine (Pipilika)

Software Engineer

Sylhet, Bangladesh

Aug 2017 - Mar 2021

- Enhanced keyword-based search relevancy by 35% through redesigning the Apache Solr schema and implementing advanced query-boosting techniques.
- Developed scalable crawlers and parsers using Scrapy and Jsoup to extract data from over 40,000 websites, boosting indexed data by 18% and enhancing search capabilities.
- Wrote RESTful API using Spring Boot to provide domain-specific time series data, improving reporting capabilities and reducing the debugging time by 20%.
- Implemented TIG (Telegraf, InfluxDB, Grafana) stack for real-time infrastructure monitoring, reducing downtime by 15% through proactive issue detection.

Southeast University

Programmer

Dhaka, Bangladesh

Apr 2015 - Aug 2017

- Oversaw IT department operations as an Interim Manager for three months, implementing effective technology solutions that improved departmental efficiency.
- Developed an Online Admission System using PHP, MySQL, and Bootstrap3, driving 25% of total admissions.
- Reduced report generation time by 30% in the University Support System (USS) through MySQL schema redesign.
- Supervised a vendor in developing a timely Human Resources Management System that met university requirements.

IT Lab Solutions Ltd

Software Developer

Sylhet, Bangladesh

Sep 2013 - Dec 2014

- Developed web-based shop management software for over 5 businesses using CodeIgniter, MySQL, and Bootstrap3, providing solutions for inventory, sales, and reporting.

TECHNICAL SKILLS

- **Programming Languages:** Python, Java, C++, PHP, JavaScript, Racket
- **Database Technologies:** MySQL (RDBMS), MongoDB (NoSQL), Apache Solr (NoSQL)
- **Frameworks & Libraries:** Spring Boot, React, WordPress, CodeIgniter, Bootstrap3, AJAX, jQuery
- **DS & ML Libraries:** NumPy, Pandas, Scikit-learn, SciPy, Matplotlib, Seaborn, TensorFlow, PyTorch
- **Web Technologies:** RESTful APIs, Postman, HTML5, CSS3, JSON, Web Scraping/Crawling (Scrapy, Jsoup)
- **Project Management & Methodologies:** Agile, Scrum, SDLC, MVC, Unit Testing (Pytest, Junit), JIRA
- **DevOps & Environments:** Git, Docker, AWS (S3, EC2, Lambda), Linux, CI/CD, Maven, Bash, OpenMPI, CMake