Nazmul Takbir

ASPIRING COMPUTER SYSTEMS RESEARCHER

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Research Interests

Focusing on the intersection of **Computer Systems** and **Machine Learning**. Key areas of interest include:

- Systems for Machine Learning
- Computer Networks
- Distributed Systems

Education

Bangladesh University of Engineering and Technology   *Dhaka, Bangladesh*

BSc in Computer Science and Engineering   *April 2018 - May 2023*

- CGPA: 3.92
- Notable Courses: Computer Networks, Machine Learning, Operating System, High Performance Database Systems, Artifical Intelligence

Research Experience

Leveraging Serverless for Online Machine Learning on Streaming Data   *May 2022-August 2023*

Undergraduate Thesis, supervised by Dr. Muhammad Abdullah Adnan

- Developed a proof-of-concept system for training online machine learning models using serverless computing on AWS, evaluating its monetary cost, training latency, and performance against traditional VM-based systems.
- Paper currently under review

Projects Related to Research Interests

Digitization of Bangla Handwritten Text

Using Convolutional Recurrent Networks with CTC-Loss to perform Word-Level Text Recognition   *March 2023*

- Implemented using PyTorch
- Codebase

Tool for Building and Training Deep Learning Models using just NumPy   *February 2023*

Implementing DNNs and CNNs from scratch, for example AlexNet

- Supports common modules like ConvolutionalLayer, FullyConnectedLayer, MaxPoolLayer
- Codebase

Implementing TCP LR-NewReno Congestion Control in Network Simulator 3 (NS3)   *February 2022*

Replicating the Results Presented in the original paper for TCP LR-NewReno

- Codebase

Operating Systems Project   *February 2022*

Paging Framework for xv6 Operating System

- Take out some pages and store them to disk, and retrieve other pages back to the memory on demand.
- Codebase

Industry Experience

Software Engineer at Chaldal.com   *June 2023 - Present*

Chaldal.com is Bangladesh's largest grocery e-commerce platform

- I work in the team that builds software for streamlining supply chain operations, including demand forecasting and inventory management
- C# | Python | Microsoft SQL Server | ASP.NET

Achievements

2022	**Grant,**	Student Research Grant by Research and Innovation Centre for Science and Engineering, BUET
multiple	**Academic,**	University Merit Scholarship
multiple	**Academic,**	Dean's List Scholarship

2020	**Hackathon,** 1st Runner Up, HackNSU
2020	**Hackathon,** Finalist, HackTheVerse DU

Skills

Languages	Python, C, C++, Java, C#, Javascript, Bash
ML Framework	PyTorch
Networking	NS3, PacketTracer, Wireshark
Database	PostgreSQL, Microsoft SQL Server
Cloud & Deployment	AWS, Kubernetes, Docker, Git
Miscellaneous	LaTeX, ASP.NET, Node.js, React, Django

Development Projects

BIIS++   *2022*

University management system for streamlining academic and administrative processes.
- React | Nodejs | Javascript | PostgreSQL
- Codebase ⬡ | Demo ▶

Zarad   *2020*

E-commerce website for buyers and sellers
- Django | Python | Bootstrap
- Codebase ⬡ | Demo ▶

Bus Radar   *2021*

An Android app for information on local buses such as routes, fares, and availability
- Android Studio | Java
- Codebase ⬡

Test Scores

TOEFL	115 (R: 30, L:30, S:26, W: 29)
GRE	334 (Q: 169, V:165, AWA: 4)

References

Dr. Muhammad Abdullah Adnan   *abdullah.adnan@gmail.com*

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and Technology   *+8801552336926*

Dr. Mohammad Saifur Rahman   *saifur80@gmail.com*

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