

MAHIM HAQUE

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Education

M. Sc. in Computer Science from Virginia Tech (Expected CGPA: 3.8)

August 2021 – May 2023

Research: ML, NLP, Automated Code Repair

Blacksburg, Virginia

B. Sc. in Computer Science from BUET (CGPA: 3.3)

February 2015 – May 2019

Research: Content based Image Retrieval

Dhaka, Bangladesh

Technical Skills

Languages: Python (Most proficient), Java, C++, Javascript, Scala, Spark, C, GO, Kotlin, Assembly, Dart.

Libraries: Pytorch, Tensorflow, Huggingface, Sk-learn, OpenCV, Flax, Jax, Flask, Fast, Observable, D3.

Technologies/Frameworks: Git, GCP, AWS, MERN, Docker, Kubernetes, Flutter, Android Studio, GCP.

Technical Experience

Palo Alto Research Center (PARC), Xerox

May 2022, August 2022

Research Scientist Intern

Palo Alto, California

- Developed a visual framework app to evaluate explanation methods for GNN based drug screening models (patent Pending).
- Leveraged the app for discovering 2 patterns for new drugs with toxic properties.

Virginia Polytechnic Institute and State University

August 2021 - Present

Graduate Teaching Assistant

Blacksburg, Virginia

- Mentored students and graded their coursework in algorithms and software design for multiple classes of 500+ students.
- Helped students and graded coursework in Android Development consisting of 100+ students.

Research Assistant, Department of CSE, BUET

November 2019 - August 2021

- Created review comment usefulness ranking website in collaboration with Samsung Research Bangladesh (SRBD).
- Build CI/CD Pipelines on GitLab using NGINX scripts, staging sites, and Docker
- Reduced workload by 20hr/week and Founded BUET CSE NLP group.

Jr. Software Engineer, Reve Systems

May 2019 - October 2019

- Created SOTA Bengali Grammar Checker web app (+4% F_1 score improvement) for ICT Division, Govt. of Bangladesh.
- Built the very First Bangla ASR application with Kaldi, ESPnet and Speech Brain.
- Deployed a FR based automatic attendance system reducing time waste by 10 hrs/week.

Machine Learning Team Lead, Pioneer Alpha (Start-up)

May 2019 till present

- Created and deployed the website which earns thousands of dollars in revenue each month.
- Leading the ML team and Built Multi-lingual chatbot for customer service.
- Leveraged Facial recognition, Pose detection models to create API's which is the First AI solution in Bangladesh generating more than 3000\$ in revenue per month.

Competitive Programming

- Top 3% among 120 teams in all 3(2016, 2017, 2018) participated ICPC regional programming contests in Bangladesh.
- Created and tested 4 problems for 2018, 2019 BUET Inter-University Programming Contest.
- Codeforces: Max Rating: 1496 (Specialist) Handle: pantho, Codechef: Max Rating: 1581.
- Solved problems: Codeforces: 577, LightOJ: 128, Leetcode: 250+, Total: 2000+.
- Maintained a blog explaining the solutions of the interesting problems with 100+ visits/day.

Projects and Publications

- Developed face recognition based web-app for automatic employee attendance using FaceNet (code), KerasOpenFace (code), Dlib (code) with face alignment for best performance saving 1 hour of employee time daily. (Only 0.04% miss rate)
- Became champion in a hackathon consisting of 97 teams by creating a Computer Vision App with augmentations and got best classification accuracy (98.7%) on Facial Images.(code)
- Solved an opensource implementation bug on a blog post and achieved (99.81%) accuracy with attention. (code)
- Deployed the first ever law enforcements assisting AI web app in Bangladesh for detecting bikers without helmet. (code)
- Secured Top 1% in kaggle with pretrained BERT on kaggle sentiment analysis competition.(code)
- Optimized Bangla OCR Android App (-3.7% WER) to solved data scarcity problem with generated synthetic data. (code)
- Trained Gpt2-xl (1.5B) on 8 v100 GPUs(AWS p3.16xlarge) for news text elaboration .(code) Generation Link.(link)
- Implemented lexer and parser in Golang from scratch for a smart calculator DSL compiler.(code).
- Implemented Simple Neural Network from Scratch(code) using pure Numpy with various activation that can classify linearly inseparable data.
- Published papers on Code search, Code summarization, Bug fixing, in ACL, IST, ICANN and HORA. Google Scholar Link