SYED NAKIB HOSSAIN

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EXPERIENCE

Bioinformatics Developer | European Bioinformatics Institute (EMBL-EBI)

December 2021 – ongoing

Ensembl Variation

Build data pipelines to store genetic variation data; develop API, and tools to serve stored and external annotation over website, REST server, and CLI.

Software Engineer | Samsung R&D Institute Bangladesh (SRBD)

April 2018 – November 2021

Software Development Infrastructure Engineering Department

- Developed portal, wrote automated scenario tests and managed deployment for a Content Delivery Network. [Django, Bash, Docker, Kubernetes]
- Configured and managed server-less distributed system in AWS to handle average 1 million API requests from global users per day. [API Gateway, Lambda, DynamoDB, CloudFront]
- Configured and managed multiple resilient and secure monolithic web applications in AWS. [EC2, ElastiCache, RDS, VPC, S3, Opsworks]
- Developed CI/CD automation infrastructure for native applications from ground up for diverse development teams that includes automated build break checks against new commits, scheduled builds, release note generation, Crashlytics reporting, Appstore upload etc.

Achievement Icon of the Month in 2019

EDUCATION

BSc, Electrical & Electronic Engineering | Bangladesh University of Engineering & Technology

Feb 2013 – Sep 2017

Achievement Dean's List Award

ACHIEVEMENTS

- World Finalist in **Microsoft Imagine Cup** 2017
- 3rd in **International Robotics Challenge Bangladesh Round (IRC)** 2015-16
- 45th in **ICPC Dhaka Regional Preliminary**, 2014
- 9th in **Bangladesh Olympiad on Informatics** 2011
- 1st Runner Up in **Bangladesh Divisional Mathematical Olympiad,** 2011
- 2nd Runner Up in **Bangladesh Divisional Mathematical Olympiad**, 2008

OPEN SOURCE CONTRBUTION

Ensembl: A popular genome browser and supporting tools.

MGPUSim: MGPUSim is a high-flexibility, high-performance, and high-accuracy GPU simulator designed for simulating multi-gpu system. [Golang]

- Added support for manual graph input for bfs benchmark. Issue 212 MR 225
- Migrated to esc to embed hsaco code object files into Go source file. Issue 87 MR 218

PROJECTS

Pancancer Classification | Github Link

Cancer classification using RNA-seq data. Transformed RNA-seq into 2D shape and train a CNN model (>96% accuracy for 33 cancer types). Grad-cam is used to determine significant genes for each cancer type.

AVR Calculation | Github Link

Retinal vessels segmentation using connected component analysis and the Arterio-venous ratio (AVR) is calculated using Euclidean distance transform and thinning.

cursorControl | Github Link

Facilitate usage of computers by controlling cursor using head movement. For users who cannot do any voluntary movement under the neck.

Multi-tasking Robot | Showcased on IRC

Built an auto-bot that follows a grid from start to finish overcoming obstacles (hills and holes) and a remote-controlled manual-bot that supporting the auto-bot to complete its task.

fasTnosis | Showcased on Microsoft Imagine Cup | Team Page

An automatic diagnosis app for detection of tuberculosis, plasmodium, and intestinal parasites in blood, spear, and stool sample using deep learning (ResNet) model.

SKILLS

Programming Languages: C/C++, Python, Perl, Rust, Go, Bash, Batch.
Web Development: HTML, CSS, JavaScript, Django
Database: MySQL, PostgreSQL
Machine Learning: Tensorflow, Keras, Pandas
Cloud/Containerization: AWS, Docker, Kubernetes
CI/CD: QuickBuild, Gitlab Pipeline, Jenkins
IaaC: Terraform, Chef
Logging/Monitoring: ELK, Nagios, Splunk