# ASIF IQBAL RAHAMAN

asif256000@gmail.com | +1(336)223-2730 | Blacksburg, VA, USA
https://linkedin.com/in/asif-iqbal-r/ | https://github.com/asif256000/ | https://asifiqbal.xyz/

**As a Computer Science Graduate with 3+ years of industry experience and a year in academic research, I am actively seeking full-time role from June 2024. My experience in diverse domains position me well to contribute to innovative and challenging projects.**

## SKILLS

**Programming:** Python, Rust, Javascript, SQL, Bash, HTML, CSS, C++, Java, GoLang, VueJS
**Frameworks:** Flask, FastAPI, RestAPI, Pandas, Numpy, AWS-CDK, PyTorch, Win32, PyautoGUI, Seaborn, OpenCV, Django, Pillow
**Tools:** Git, Jenkins, Docker, Unix, Nginx, Supervisor, MySQL, MongoDB, AWS, Selenium, Apache Airflow, Microsoft Azure

## EDUCATION

**VIRGINIA TECH** – BLACKSBURG, US **Aug 2022 – May 2024 (Exp)**
**Master of Engineering** in **Computer Science** CGPA: 3.9/4.0

- **Courses:** AI Tools for Software Delivery, Natural Language Processing, Data Analysis, Applications of Machine Learning, Computer Vision

**VIT UNIVERSITY** – VELLORE, IN **Aug 2015 – May 2019**
**Bachelor of Technology** in **Computer Science** CGPA: 8.0/10.0

- **Courses:** Data Structures & Algorithms, Database Management, Software Development, Data Mining, Cyber Security, Network Architecture

## EXPERIENCE

**DEPARTMENT OF COMPUTATIONAL CELL BIOLOGY, VIRGINIA TECH** – BLACKSBURG, US **Oct 2022 – Present**
**Software Developer**

- Designed an automated simulation of cell cycle with boolean model of protein interactions with significantly better efficiency and accuracy.
- Utilized Pandas, Numpy for data manipulation, database APIs for data validation and dataclass to structure inputs in Python for the project.
- Achieved a **5x increase** in simulation speed for model perturbation analysis by implementing parallel processing and algorithm optimization on the **ARC@VT supercomputer** for automated improvement of exponentially growing (approx **16M interactions**) cell interaction models.
- Publication of the research work (preprint) is available at biorxiv.org/content/10.1101/2023.10.30.564745v1

**SECLORE TECHNOLOGIES PVT. LTD.** – MUMBAI, IN **Dec 2021 – Jul 2022**
**Product Engineer**

- Drastically **reduced customer onboarding time** from **several days** to a **few hours** by developing DevOps automation with AWS-CDK.
- Developed framework that deployed Seclore's data security solution on cloud for clients within hours using fully managed AWS architecture, incorporating AWS CloudFormation, ECS, DynamoDB for storage, and CloudWatch for monitoring, enhancing operational efficiency.
- Implemented a scalable infrastructure as code for individual clients in cloud, used Docker for containerization, and Jenkins for creating organized pipeline for executing the code, streamlining the management and deployment process.
- Collaborated in a team of 3 with agile principle (CI/CD) to develop the initial framework within 4 months, showcasing effective teamwork.

**ERICSSON INDIA GLOBAL SERVICES PVT. LTD.** – BANGALORE, IN **Jan 2019 – Jul 2021**
**Software Engineer**

- Developed a rule-based recommendation engine that automates the analysis of network cell performance, achieving **36% automation gain** for multiple telco clients by utilizing Pandas and Numpy for data manipulation and enhancing performance through parallel processing.
- Constructed an automated API system for daily processing of **~30GB data** from datalakes, improving data handling efficiency by cleaning, categorizing, and storing data as parquet files using Pandas and requests library, facilitating faster access for the recommendation engine.
- Engineered an RPA framework to streamline network management operations, securing **35% boost** in **automation efficiency** by utilizing OpenCV, Selenium, win32 for targeted actions, MongoDB and MySQL for data integration, with backend developed using Flask library.
- Integrated the RPA framework with Ericsson's BotStore platform using internal APIs, streamlining the automation process.

## PROJECTS

**Personal Website with FastAPI, AWS and Nginx** **Jan 2024**

- Embraced a hands-on learning approach by designing a dynamic website using FastAPI, SQLite and Jinja2 in Python, alongside JavaScript enhancements for dark mode and transitions, and docker-compose for containerization of the application.
- Deployed the website in AWS instance, employing Nginx proxy server to efficiently route traffic, ensuring seamless user access.
- Designed the website with a forward-thinking structure to potentially support multiple user profiles, enhancing scalability and engagement.

**EEG Signal to Text Extraction** **Nov 2023**

- Replicated the pioneering research of Wang, Ji et al to convert EEG signal to text tokens by fine-tuning BART model with custom data.
- Implemented zero-shot algorithm using PyTorch to classify the generated texts for verifying sentiment analysis of EEG signals.
- Underscores potential of machine learning in interpreting complex neural data without requiring explicit examples for each category.

**Multiple Object Tracking using FairMOT and GAN** **Dec 2023**

- Constructed a novel architecture for multiple object tracking, integrating FairMOT with Generative Adversarial Networks (GAN).
- Demonstrated that isolating the generator in a separate layer in the architecture diminishes the tracking performance, as the discriminator readily distinguishes between fake and real data based on layer origin, highlighting the importance of architecture design.

## CERTIFICATIONS & AWARDS

- **Python for Data Science and Machine Learning Bootcamp** Udemy Certificate - May 2021
- **Improving Deep Network: Hyperparameter Tuning, Regularization & Optimization** Coursera Certificate - Jul 2020
- **Neural Networks and Deep Learning** Coursera Certificate - Jan 2020

**Bi-annual Galactic Award from Ericsson (2020)** for achieving outstanding business excellence with data automation framework.