

Barun Das

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Education

GEORGIA INSTITUTE OF TECHNOLOGY

MS in Computer Science

Aug 2021 – May 2023

GPA: 4.0/4.0

INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

B.Tech(Hons.) in Metallurgical & Materials Engineering + Computer Science & Engineering (minor)

July 2016 – June 2020

GPA: 8.97/10.00 (rank 2)

Experience

GENERAL ELECTRIC

Hyderabad, India

Software Engineering Specialist | Java, SQL, Docker, Jenkins, Kubernetes

August 2020 – August 2021

- Optimized GE's Kubernetes based solution for creating microservices over AWS – used by over **150 teams** globally
- Designed and developed REST-based microservices using Java and Spring Boot to add functionality to the platform (e.g., testing, storing preferences, data layer, etc.) – dockerized and deployed them as Kubernetes pods on the cluster
- Created & updated PDIs & Helm charts for automating the pod deployments; migrated build artifacts to JFrog Artifactory
- Visualized pod and system-level statistics for over **15** internal and default components using Grafana and Prometheus
- Configured Alertmanager to send out alerts to relevant stakeholders when user-defined thresholds were crossed
- Tested OSB components (*Artemis and Kafka*) using *Apache Camel* to ensure that client deliverables were being met

Digital Technology Intern | Javascript, Protractor, Cucumber

May 2019 – July 2019

- Performed frontend development using CSS stylesheets, JavaScript, Polymer Project applications and Vaadin
- Developed an automated test suite using Protractor-Cucumber which was integrated with the CI/CD pipeline

Relevant Projects

FEDERATED LEARNING BASED RECOMMENDATION SYSTEM | Pytorch, scikit-learn, surprise

Oct 2021 - present

- Worked in a team of 5 to create a novel collaborative and content-based hybrid recommendation model for federated learning without compromising on privacy – also managed to tune performance to improve that of a standard collaborative system
- Configured 2000 edge nodes to send pruned gradients to the central server which consumed them by Federated Averaging
- Designed a demo web-app to visualize the user nodes that received the updated central model with the recommendations

BLOCKBOARD | Python, Javascript (D3.js, Swiper.js) HTML, CSS, Azure

Oct 2021 - present

- Collaborated with 5 teammates to develop a visualization tool that provides simplified, holistic information on Bitcoin (BTC)
- Analyzed correlation between BTC price, on-chain data, financial metrics and Twitter sentiment to develop unique insights
- Combined these data sources to create novel visualizations based on block-time for both laypeople and analysts/traders

AGEING PROGNOSTICS FOR ENGINEERING COMPONENTS USING ML | Python

July 2019 – May 2020

- Trained an SVM which learned the conditions for ageing failure in independent parameters of a 2nd-order system
- Developed a methodology which used the error response to identify ageing failure in the second-order system
- Built a similarity-based prognostics model using regression analysis on historical data to predict RUL of components

EXPLAINABLE ARTIFICIAL INTELLIGENCE

Dec. 2018 - July 2019

- Performed paper critique and preliminary research work on explainable AI (XAI) models and suitable areas of application
- Studied applications of stochastic and/or graphs for XAI, for representing stochastic, context-sensitive grammar of images

SHIP DETECTION BY VARIATIONAL BAYESIAN INFERENCE | Python

Aug. 2018 – Nov. 2018

- Decomposed polarimetric SAR images to separate sea-clutter and established a probabilistic model of ship detection
- Applied variational Bayesian inference to estimate the posterior distributions and obtain the final results

Skills

- **Languages and frameworks:** Python, Java, C/C++, Javascript, D3.js, HTML, CSS, Hadoop, Spark, SQL
- **Technologies:** Docker, Kubernetes, AWS, GCP, Tableau, Figma, Prometheus, Grafana, Alertmanager, Artemis, Jira, Jenkins

Extra-curricular Activities

- Mentored 5 undergraduate students in their first three semesters on campus (program of the Dean of Student Affairs)
- Served as a Senior Division cadet in the NCC ARW (youth wing of the Indian Air Force) from 2016-2018
- Volunteered to maintain cleanliness in neighboring villages and provided free tutoring to underprivileged students.
- Played in the silver-winning RP Hall soccer team; captained the RP Hall debating team to win gold in Inter Hall 2020.