Shivam Mishra

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EDUCATION

Vellore Institute of Technology, Chennai, India

Oct 2019

Secured a Bachelor of Technology in Electronics and Communication Engineering with Distinction

(CGPA 8.72/10)

Relevant Coursework: Data structures and Algorithms, Computer Organization and Architecture, Operating Systems, Computer Communication, Problem Solving and Object-Oriented Programming, Embedded System Design, Calculus for Engineers, Probability Theory and Random Processes, Statistics for Engineers, Neural Networks and Fuzzy Control.

PROFESSIONAL EXPERIENCE

Ericsson, Bangalore, India

Jun 2021 - Present

Software Developer – Cloud Container Distribution - Software Defined Networks

- Managing and orchestrating all containerized applications deployed in Ericsson products using Kubernetes, Helm, and open stack heat deployments.
- Handling Splunk Data for a platform for analyzing and managing data related to a project using open-source tools such as Kube state metrics and Node Exporter and adding efficient Python code for various analytics.
- Adding Golang code components to manage ingress, networking, storage, monitoring using Kubernetes.
- Developing projects to automate version update process on large set of yaml and json files using efficient algorithms in Python/Golang programming languages.

Blackrock, Mumbai, India Jul 2019 – Jun 2021

Analyst – Data and AI - Production monitoring

- Built data monitoring tools to analyze and read the data coming from the files of various Aladdin clients by using Python and Angular for Blackrock's Green package teams for Analytics and track the service level agreements.
- Performed predictive analysis on financial data for proper delivery of Green Package reports to Blackrock's clients.
- Created a file monitoring tool to manage the data coming from the large set of files of various Index vendors to perform benchmark analytics by designing efficient algorithm and coding the same in Python.
- Automated the Impact Analysis reports generation process to analyze production failures by collecting large set of information from various databases to create an informative report make the Green Package Production efficient.

Technology Intern – Data and AI

Jan 2019 - Jul 2019

- Converted old code bases in Perl language to more efficient Python language to improve productions efficiency.
- Explored various tools and languages such as Python, Angular, Git, Tableau to implement on financial data such as Portfolios, Securities, and risk analytics.

Nokia Networks, Chennai, India

May 2018 – Jul 2018

Student Intern – Technology team

• Programmed a smart image to text converter for Nokia's logistics using various frameworks and languages such as Python, Pandas, NumPy and scikit-learn.

VIT University, Chennai, India

Jun 2017 - Nov 2017

Teaching Assistant – Data Structures and Algorithms

- Designed Assignments of Programming and Data structures for the junior students and helped students with their academic projects by discussing their ideas and by providing them necessary references.
- Organized Doubt solving sessions for the students of Programming and Data structures.

ACADEMIC PROJECTS AND PAPERS/PATENT

A Machine Learning Assisted Optical Multistage Interconnection Network: Performance Analysis and Hardware Demonstration

- Increased high volumes of traffic demands at datacenters are handled by all-optical Multistage Interconnection Networks (MIN) which are implicitly designed to withstand the same.
- Analyzed Contention resolution mechanism in MINs which becomes a bottleneck to handle such data traffic.
- Electronic signal processing methods which are traditionally used to resolve contention in MIN is replaced with a select list of machine learning algorithms for contention resolution in this paper.
- Examined Performance of the entire network in terms of injection rate, average latency by using Machine Learning Algorithm and latency distribution is suitability accessed.
- Co-Authored the paper on the same in ETRIJ Publication and submitted it for publication, Manuscript ID etrij-2021-0182, Jun 2021 Present.

Data Tracker for Blackrock's Green Package (Internship and Final Year Project)

- Devised a data tracker for Blackrock's Green Package to streamline the reports generation process.
- Wrote Python parsers to onboard data from client's files to various Databases.
- Ran various analytics on financial data using financial models. Verified and checked the financial data at various steps of Analytics Process as well as the data errors as per the Blackrock's data models.
- Created a JSON response of the final data and sent it to various servers for reports generation.

IoT Enabled Farming Assist and Security Using Machine Learning

- Proposed a system that guides farmers to obtain larger quantities of produce from their fields and ensure crop security by analyzing various factors such as temperature, moisture content using Machine learning and IoT.
- Co-Authored and published a paper on the same in ARPN Journal of Engineering and Applied Sciences in May 2019, Volume 14, Issue 9, ISSN: 1819-6608.
- Won Best Project Based Learning Award at VIT Chennai in September 2017 for the same.

Smart Production and Logistics System (Based on Machine Learning)

- Designed smart production and logistics system for efficient Production floor and transportation management.
- Smart Production: Analyzed and surveyed machines in a production line of Nokia Chennai factory.
- Collected the values of Power, voltage, and temperatures on a normal working condition. Trained the Machine Learning model (K nearest neighbors) the collected values.
- Recorded same values for a particular day and was given as input to determine if any machine is behaving abnormally and therefore replace faulty machines as a preemptive measure to ensure normal functioning of the production line.
- **Smart Logistics:** Connected GPS and RFID modules on node MCU board and installed it to transport vehicles, where each package has RFID code which will automatically be read once the package is kept in vehicle.
- Enabled automated alerts to the manager as text message pertaining to vehicle location and package information once the vehicles start from factory as well as automatic scanning of package once the vehicle reach delivery location.
- Won IoT Make-a-thon organized by Nokia and availed an internship opportunity at Nokia in year 2018.

Home Automation and Security System

- Created a user specific smart lock and voice assisted system using Raspberry pi and MATLAB for smart homes. Collected voice samples through raspberry pi and converted it in data metrices in MATLAB.
- Programmed the system in a way, when user says "Open the door" the voice is compared with already stored metrics and a mean square error is calculated. The doors unlocks if the error is less than 0.2, else the owner is alerted.
- Employed the same technique for commands such as "Switch on lights" to switch on the lights.
- Won 3rd place for the same in Signal Processing Code-a-thon at VIT Chennai in the year 2017.

Hardware implementation of contention aware optical switching node for data center Networks

- Experimentally demonstrated the contention resolution in multistage bidirectional with minimum electronics. Verified results in terms of eye diagram in both the directions.
- Co-Authored and published a paper on the same in International Wiley Publication in Jun 2019, DOI: 10.1002/mop.31899. Published patent regarding the same in Jun 2019, patent number: 201941008671.

TECHNICAL SKILLS

- Programming languages/ Tools: C, C++, Python, Golang, MATLAB, Tableau, Octave, Git bash, Grafana, Kubernetes
- Data structures and Algorithms, Machine learning, Internet of Things, Software Defined Networks

EXTRA CURRICULAR ACTIVITIES

- Assigned as Student Coordinator for National Service Scheme at VIT Chennai during the year 2017. Arranged Medical Health Camps for the villages outside Chennai City.
- Selected as the Program Representative for Electronics School at VIT Chennai for the year 2017. Represented Students in Professors and Dean meetings and provided their feedback and suggestions. Helped Junior Students to understand the Curriculum and helped them with their Semester Projects.
- Won Microwave and Photonics Make-a-Thon at VIT Chennai in the year 2018.
- Won Novel Idea Award in IoT Make-a-Thon at VIT Chennai in the year 2017.
- Completed Course on Python Data Structures offered by University of California, Davis on Coursera in Oct 2020.
- Completed Course on SQL for data science offered by University of Michigan on Coursera in Nov 2019.