Abhishek Kumar

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EDUCATION

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY (SRMIST) Chennai
Bachelor of Technology in Computer Science and Engineering: GPA: 9.37/10 May 2022

Relevant Coursework:
Distributed Computing, Web Application Development, Software Engineering Principles, Computer Architecture, Operating Systems, Cloud Computing, Aerial Robotics, Multi-Disciplinary Design, Probability & Queuing Theory, Computer Networks, Advanced Calculus

CARMEL JUNIOR COLLEGE Jamshedpur
Higher Secondary Score (ISC) – Percentage: 86.5% 2018
Secondary School Score (ICSE) – Percentage: 95% 2016

RESEARCH EXPERIENCE

Title: **Enhancing Network Quality of Service via Adaptive Automation in SDN** Chennai
Supervisor: Dr. Savaridassan P. Nov 2021 – Present

- Proposed a dynamic alternative to the static CLI-based QoS policy implementation, which is tedious and difficult to scale.
- Developed a real-time traffic categorization model using Deep Learning which used traffic class signatures for identifying applications and applying QoS policies to the appropriate service categories.
- Used Reinforcement Learning for optimal path selection for the classified traffic, which was installed on the network switches using OpenFlow.
- Integrated network switch's inherent capabilities like deep buffer or low latency as a data point to enhance the accuracy of the optimal path selection, with per second telemetry data streaming for traffic heuristics.

PROFESSIONAL EXPERIENCE

Arista Networks, India Pvt Ltd. Bangalore
Professional Services Engineer Aug 2021 – Present

- Developed a Python parser to convert 1000+ Palo Alto Firewall Policies to Arista's ACL rules as a part of DC migration efforts for Cirrus Cloud Services.
- Led Audit of LivePerson's UK DC and created a Go program to automate extraction of SVI and VRF information from the network configurations, thereby completing the Analysis stage in 30% of the estimated time.
- Worked on the redesign of ICICI Bank's Mumbai DC and automated the CRUD operations of the DirectFlow rules using Ansible and Jinja templates.
- Currently working on Project Eagle with the Indian Air Force for designing the Out Of Band Network for IAF Delhi-NCR Data Centers.

Fleksa
Germany

React Native Developer

Aug 2020 – Jun 2021

- Developed Order Management and Customer App for German Restaurants utilizing React Native Framework, Functional Components and Hooks API, with Responsive Component design.
- Decreased app startup time by 80% (from 5 secs to 1 sec), using Bundle Splitting and Lazy Loading.
- Gained experience working with Server-Side Rendering to launch 100+ flavors of customer apps, maintainable from a single codebase.
- Worked with complex menu structures consisting of 5000+ items and gained extensive experience optimizing large list rendering.

Zopnik
Gurugram

React Native Developer

Jun 2020 – Jan 2021

- Gained hands-on experience working with One Signal's Cloud push notification and Google's Geolocation and Geocoding API.
- Integrated internationalization using i18next, providing support for 10+ local languages including Hindi, Tamil and Marathi.

Tata Steel
Jamshedpur

Internship

Apr 2020 – Jun 2020

- Developed a SmartCLOSE ICR Data Management System using Oracle Database 12c, MVC Framework, Javascript and Jquery.
- Single Handedly designed and developed the entire front end using Linq queries and used C# to deploy the API models to interact with the Database using ADO.net.
- Learned and Implemented SMTP protocol to facilitate automatic password reset functionality for portal users.

RELEVANT PROJECTS

Cloud based App Development with React Native
SRMIST

Individual – Exploratory Project – Cloud Computing / cross-platform frameworks

Nov 2020 – Present

- Developed asynchronous REST API Wrapper as a Higher Order Component (HOC) using Axios and authentication using JSON Web Token.
- Integrated Cloud Push Notifications using Firebase and One Signal Cloud Messaging .
- Gained Hands on experience working with React Native animated library, designed Splash Screen and Flatlist Item render animations
- Implemented QA environment management and search interface debouncing using Open Source libraries – React Native Config and Lodash.

SRM Unmanned Ground Vehicle
SRMIST

Independent Project – Computer Vision / SLAM / Robotics

May 2020 – Jul 2021

- Developed a swarm of autonomous rovers to perform in campus deliveries inspired by KiwiBots (Developed by UC Berkeley).
- This project used NVIDIA JetPack SDK for accelerated object detection and Simultaneous Localization and Mapping using inputs from LiDAR and stereoscopic cameras.
- The project had secured a funding of Rs.1,50,000 under the scheme to fund the top 8 innovative ideas by NewGen-IEDC, Ministry of HRD, Government of India.

Monitoring and accelerating plant growth using IoT
Academic Project for IoT course – IoT/ App Development

- This project was a submission for a project-based course. An IoT powered Hydroponics monitoring tool was developed using Raspberry Pi as a centralized controller.
- A closed-loop system was deployed using a Proportional Integral Derivative (PID) controller that used humidity, ambient temperature, and PH readings for feedback.
- The backend was developed using Express and NodeJs with MongoDB as the database and the Android/iOS application was built on the React Native framework.

Task Co-ordinating Robots for ABU Robocon 2019 | *Robocon Lab*
Coding Division Lead – SRM Team Robocon | Supervisor: Dr. Joselin Retna Kumar

SRMIST
Sep 2018 – March 2020

- Worked on optimizing Differential and Holonomic drives using Kalman Filter based sensor fusion and implemented inverse kinematics to achieve horse-gait for the problem statement's quadruped robot.
- Secured 13th Rank among 120 teams in the national round, with an award for Best Economical Robot.
- Led the Coding division of the team. Also, trained & mentored 6 sophomores & 9 freshmen.

AWARDS & HONORS

- Adjudged Best Delegate at SRM Model United Nations (2019) out of 1200 delegates.
- Most Economical Robot at National Robotics Competition ABU Robocon 2019.
- Secured 1st Place at Techmux Hackathon, developed a Plant Incubator for optimal plant growth with light, temperature and nutrient solution control.
- Secured 1st Runner-up position out of 280 participants in Leadership Challenge organized by Grey Caps.

LICENSES & CERTIFICATIONS

- Introduction to TensorFlow for Artificial Intelligence, Machine Learning & Deep Learning (3YEE9723BMCF)
- ACE: L2 (Arista Cloud Engineer: Level 2)
- ACE: L3 (Arista Cloud Engineer: Level 3)

MOOCs

- COURSERA: *Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning*
- EDX: *CS50's Introduction to Artificial Intelligence with Python*
- EDX: *CS50's Mobile App Development with React Native*
- EDX: *Data Science: R Basics*
- UDEMY: *Artificial Intelligence A-Z™: Learn How To Build An AI*
- MIT OpenCourseWare: *Blockchain And Money*

TECHNICAL SKILLS

- Programming Languages: *C++, Java, Javascript, Python, Go, JQuery*
- Cloud Platforms: *Google Cloud Platform, AWS*
- Robotics: *PID controller, SLAM, Kalman Filter, ROS & Gazebo (basics)*
- Frameworks: *React Native, NextJS, ASP.NET MVC*
- Tools: *Node.js, Express, Ansible, Jinja, MAKO, Android Studio (Intermediate), Xcode (Intermediate)*
- Miscellaneous: *Git, Jenkis, Kubernetes, Docker, Oracle SQL 12c, Firebase, Redux*

INTEREST & ACTIVITIES

- Co-founder: National Youth Colloquium – Organized workshops and national level MUNs to provide a platform for students of SRMIST to learn the dynamics of state-level, national and foreign policies
- Active Member of Facebook's React Native Developers Circle
- Personal Interests – Basketball, Poetry, Content Creation - Vlogs

REFERENCES

Dr. M. Suchithra
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Department of Computing Technologies
SRMIST, Chennai
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Ms. Priya S.
Assistant Professor (Sr. G)
Department of Computing Technologies
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