PUNID RAMESH NATESAN

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EXPERIENCE

HP Inc. — Bangalore, India

Software Engineer — Jul 2022 - Present

- Enhanced codebase and reverse-proxy layer to support multiple versions of APIs in an IoT Shadow Gateway service
- Worked on mitigating high severity vulnerabilities in 5 microservices
- **Tools:** Springboot, RDS, Apigee, SonarQube, NexusIQ, Docker, Splunk

RnD Intern — Feb 2022 - Jun 2022

- Implemented distributed tracing of platform microservices using OpenTelemetry for quick diagnosis of the cause of request latency and failure
- Developed a web application for platform solutions to manage API usage consent by upgrading the existing process done using sheets
- **Tools:** OpenTelemetry, EC2, ELB, RDS, Zipkin, Spring Boot, React, MySQL, Docker, Terragrunt, Splunk

Reliance Jio — Bangalore, India

Software Engineer Intern — Aug 2021 - Jan 2022

- Designed, architected, and developed the backend solution for Energy Metering
- Implemented an OPC-UA client manager service to handle a massive number of OPC-UA clients
- Demonstrated scalability via Kubernetes, tested up to 200,000 concurrent devices
- Improved performance of existing system via event driven backend using Kafka
- **Tools:** Kubernetes, Docker, Kafka, MongoDB, Javascript, OPC-UA, CoAP, Shell Scripting

KFX Labs — Bangalore, India

IoT Engineer Intern — Nov 2020 - Dec 2020

- Automated actuation via edge analytics on realtime seismic sensor data and visualization on Grafana. The solution assisted in creating a base for a platform for critical asset monitoring
- **Tools:** EdgeX Framework, Docker, GoLang, Python, Telegraf, InfluxDB, Grafana, GCP

SKILL SET

Languages: Java, Python

Technologies: Kafka, Docker, Kubernetes, Flask, Spring Boot, Bootstrap, AWS, PostgreSQL, React, MongoDB

PROJECTS

⦿ Morax

- A CLI tool to view Coinbase wallet data fetched using Coinbase APIs, authenticated over OAuth 2.0
- A Flask server deployed on Heroku that serves as a redirect URL to facilitate authentication
- The tool also displays a graph of real time price fluctuations from the historical data fetched from Nomics API
- **Tools:** Python, Click, Flask, OAuth2.0, Coinbase APIs, Heroku

Artemis

- A website that provides real-time data on the spread of the Coronavirus
- Realtime data is facilitated by means of APIs from John Hopkins University and thevirustracker.com
- Historical data is analyzed to visualize trends of top 5 countries
- **Tools:** Bootstrap, Django, PostgreSQL, Heroku

Utilization of Embedded Systems for Smart Farming

- A hardware-based project that utilizes soil moisture, temperature sensor, humidity, and light intensity sensors to capture realtime data on the field
- Edge analytics is utilized to perform smart actuations on the spot for avoid latency
- The sensor data is uploaded to Firebase RTDB and is visualized on a Node-Red dashboard
- **Tools:** Node-RED, Firebase RTDB, NodeMCU, Arduino, Sensor array

CERTIFICATIONS

AWS Certified Solutions Architect - Associate: AWS Certification that validates cloud experience

Deep Learning Nanodegree: Nanodegree program for Deep Learning using PyTorch and AWS on Udacity

PUBLICATIONS

[1] Chavhan, S., **Ramesh, P.**, Chhabra, R.R.S., Gupta, D., Khanna, A. and Rodrigues, J.J., 2020, September. Visualization and performance analysis on 5G network slicing for drones

In Proceedings of the 2nd ACM MobiCom Workshop on Drone Assisted Wireless Communications for 5G and Beyond (pp. 13-19)

https://dl.acm.org/doi/abs/10.1145/3414045.3416208

[2] Mehta, K.R., **Natesan, P.R.** and Jindal, S.K., 2023, February. Proposed Experimental Design of a Portable COVID-19 Screening Device Using Cough Audio Samples.

In Proceedings of International Conference on Data Science and Applications: ICDSA 2022, Volume 1 (pp. 39-50)

https://doi.org/10.1007/978-981-19-6631-6_4

EDUCATION

Vellore Institute of Technology   Vellore, India
B.Tech ECE with Specialization in IoT and Sensors; GPA: 9.16   Jul 2018 – Jul 2022