Nakul Vankadari Ramesh

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PROFESSIONAL EXPERIENCE

Amazon Inc. (AWS), Seattle, USA
Software Development Engineer I & II (AWS AI)   February 2020 - Present
- Launched new AWS machine learning service for anomaly detection, "Amazon Lookout for Metrics"
- Led team of 4 for implementation, security compliance and operational readiness of causality feature in 9 regions
- Developed high-scale state management for anomaly detection, inferencing 100K time-series simultaneously
- Designed and delivered Human-in-Loop feature to utilize feedback on anomalies through customer facing APIs using API Gateway and SageMaker, enabling custom detection reducing false-positives by 30%
- Improved training script in Docker to support 100K time-series by optimized load sharing in disk and memory
- Created CloudWatch dashboards and alarms monitoring health and performance of service, presented to AWS AI organization (~500 members) and leadership on a weekly basis
- Implemented tag support for the service having 99.99% availability, ~5000 avg requests per day across regions
- Organized and conducted service-wide load test to identify feature limits, fix potential bugs before final launch
- Mentored intern at Amazon whose project saved 1 day deployment time, got offered full-time job upon completion

Philips, Andover, USA
Software Engineer Intern (Cloud and Big data)   January 2019 - August 2019
- Developed Spring MVC Microservice in agile environment providing data governance via Elasticsearch in ETL pipeline from on-premise to cloud infrastructure, achieving data reliability and means for 90% data recovery
- Architected full infrastructure deployment using Terraform, reducing deployment times by 2 days with CI/CD

Schneider Electric R&D, Bangalore, India
Software Engineer   February 2017 - August 2017
- Liaised with team of 10 to manage a Java simulator for Green Power devices; implemented ZigBee features on simulator, producing a 60% enhancement of test coverage and save ~$4000 expenditure on metering devices
- Designed Python script utilizing REST API to automate actions on devices resulting in 20% faster test cycles

Intel, Bangalore, India
Systems Programmer (Intern: 2.5 years & Full-time: 2 years)   March 2012 - July 2016
- Achieved 25% faster regression results by making virtual pool of dormant resources saving ~$8000 on new servers
- Spearheaded team of 5 members to upgrade backup infrastructure; increased backup job's success rate by 50% through solving issues on backup clients, adding storage capacity and enabling cross-site backup replication jobs

EDUCATION

Northeastern University, Boston, MA   September 2017 - December 2019
Master of Science in Computer Science (GPA: 3.6/4)
Teaching Assistant: Computer Systems (1 year), _Research Fellowship_: GPS spoofing mitigation (4 months)

New Horizon College of Engineering, Bangalore, India   September 2010 - June 2014
Bachelor of Engineering in Computer Science (GPA: 3.7/4)

SELECTED PROJECTS

"Predict Anomaly Detector Activation Time" – Amazon Lookout for Metrics   Summer 2021
- Winner of Lookout for Metrics hackathon for predicted activation time, selected for feature launch

"Cloud-native High-Performance computing" – Lustre on Kubernetes   Fall 2019
- Built a user-friendly platform to run Lustre, popular high-performance computing file system on Kubernetes
- Presented Lustre on Kubernetes project at USENIX conference, ~100 attendees with expertise on storage solutions

"Kademlia" – A Distributed Hash Table with TLS   Spring 2018
- Built a Distributed Hash Table in Python for peer-to-peer communication, node interaction was protected via custom TLS architecture supporting confidentiality, integrity and authenticity of messages in transit