ADITYA (ANDY) NAIDU

aditya.naidu@gmail.com

SUMMARY

15+ years of experience working on numerous software projects and technologies in system design, API design, backend implementation, performance optimization, technical documentation, cross functional team interaction, mentoring and applied research. Programming expertise in backend development in Python/Postgres on AWS infrastructure. Domain expertise in telecommunication networking with a focus on security.

PUBLIC PROFILE

https://www.nulloz.com/

https://github.com/adityanaidu

https://www.linkedin.com/in/aditya-naidu-73706114/

SKILLS

Software Engineering

- Languages: Python, C, bash, Java, Prolog, Javascript (jQuery, D3.js).
- Operating System: Multiple flavors of Linux, Unix, MacOS.
- Databases: Postgresql, MySQL, Mongodb, Netezza, Oracle.
- Tools/software: Jira, Confluence, vim, git, docker, Django, flask restx, Jenkins, Redis, Solr
- AWS: SQS, Lambda, RDS, S3, cloudwatch, cloudformation.
- Networking: TCP, IP, BGP, OSPF, DNP3, switching, Juniper JunOS, Cisco IOS.

EMPLOYMENT

Clarivate, Ann Arbor, MI (Remote)
Lead Software Engineer, 2024/03 - current
Senior Software Engineer, 2021/11 - 2024/03

- Design and implement a books marketplace RESTful API in Python (flask restx) on AWS infrastructure. Write quality DRY optimized reliable code and make sure colleagues do the same during code reviews. Whenever possible incrementally refactor code, redesign pieces and reduce technical debt. Work on regular production releases, pagerduty and production alarms on rotation.
- Take ownership of multi-sprint efforts related to infrastructure improvements or customer facing stories. Tasks involve soliciting requirements, designing, getting stakeholder buy-in, implementing, documentation, testing automation, and deploying to production.
- Optimize database queries (query tuning, table partitions, adding/deleting DB indexes), and data pipelines (parallel table dump and load, scaling DB). Resulted in 4x reduction in pipeline run time and associated cost saving in AWS.
- Automated multiple error prone manual processes. This included adding regression tests, building new automation product features and creating Jenkins jobs.
- Interact with product, customer support, and team members to debug production issues, deploy prompt fixes to production, prioritize and work on features and enhancements needed by end customer.

Peraton Labs, Basking Ridge, NJ 2008/08 - 2021/11
Software Engineer/Research Scientist 2014 - 2021
Associate Research Scientist 2008 - 2014

- Worked progressively as co-op student, intern, engineer and finally a senior engineer on multiple efforts to transition research ideas into enterprise software products and services related to cybersecurity.
- Participate in full stack development, design, production support, requirements gathering in a startup like environment. Optimized and scaled software by many orders of magnitude for production use.
- Contribute on non-technical tasks including pre-sales, create status reports, interactions with product and operations team.

Select projects include:

Reliable Telemetry during DDoS attack

- Design a reliable (unlike UDP), low latency (unlike TCP) communication protocol to transport telemetry over UDP in a high packet loss environment.

- Successfully tested the protocol in a 10 Gbps DDoS attack.

SecureSmart Managed Security Services

- Added numerous advanced forensic and visualization capabilities to the system based on feedback from product and operations team.
- Responsible for scaling datastore to store three billion packets (1TB postgres DB) and import 20 million packets per day.
- Profiled and optimized the entire backend including hardware (memory, Solid State Drives), database (SQL query tuning, server configuration, DB index, table partitioning), server-side code optimization, result caching in persistent tables or memory.
- SecureSmart technology has been deployed at major utilities, including Sacramento Municipal Utility District, Hawaiian Electric Company, Commonwealth Edison, and Baltimore Gas and Electric, etc.

IP Assure

- Worked on innovative ways to detect IP network configuration issues that could cause cyberattacks, network performance degradation, and single point of failures.
- Brainstormed ideas, designed and built prototypes, and finally integrated them into the product.
- Involved in pre-sales activities including product installations and demos at customer site and industry expos.
- IP Assure's customers included U.S. Securities and Exchange Commission, University of Delaware, U.S. Department of Defense (sole-source procurement), Federal Reserve Bank.

Integrated Network Monitoring System

- Worked as a researcher and senior developer on the system from its inception to its scaling and hardening as an enterprise software that can handle millions of packets per hour in real time for a Tier I ISP.
- Rather than naively looking at just the raw traffic volumes, INMS looks at multiple indicators like SYN ratio, source IP diversity, spoofed sources, IP geolocation along with their trends. Looking at all these indicators together produce higher quality alerting with fewer false positives.

U.S. Securities and Exchange Commission (Contractor)

- Work on architecture and design of extract transform and load systems including data modeling. (IBM Netezza, Oracle RDBMS, python, bash, IBM Datastage)
- Led and mentored a group of software developers and data modelers.
- Support management with technical documentation, weekly status report, prioritize work items, create release schedules.

Graduate Intern/Co-op, Telcordia Advanced Technology Solutions 2007/02 - 2008/07

- Worked on the initial requirements, design, and prototyping of the system.
- Surveyed configuration syntax of various network vendors (Cisco IOS, Juniper). Studied multiple TCP/IP network protocols.
- Designed a vendor neutral database schema to accommodate various network protocols and device vendors in the final product.

Dean's Research Assistant, NYU Polytechnic School of Engineering 2006/09 - 2007/01
Worked on CoopMAC, a link layer protocol which uses two layer 2 hops instead of the vanilla one hop between mobile nodes and access point in 802.11 protocol. The two hop CoopMAC protocol increases throughput of the network by allowing for more cooperation among wireless nodes which increases transmission speed of the slowest nodes at the fringe of the network.

EDUCATION

NYU Polytechnic School of Engineering, Brooklyn, NY, M.S., Telecommunication Networks, 2008.

Mumbai University, Mumbai, India, B.S., Electronics and Telecommunication, 2003.