## Technical Leader with 10+ years of experience in network automation, secure device provisioning, and scalable service design. Proven track record at Cisco driving high-impact initiatives using Go, Python, gRPC, and Kubernetes. Inventor on a U.S. patent, with a strong focus on security, reliability, and mentoring.

## Experience

**Technical Leader I**, Cisco Systems Oct 2021 – Present

Manageability service **Technologies** – Go, gRPC, Python, C

* Played a pivotal role in redesigning and implementing the XR Manageability services architecture, significantly enhancing both scalability and reliability while achieving high availability across multiple critical services
* Leveraged GitHub Copilot to accelerate development velocity, achieving 15% faster project delivery while maintaining quality standards with 95% test coverage across all pull requests
* Architected and implemented secure device management features using industry-standard gRPC technologies (gNMI, gNOI, gNSI), enhancing operational efficiency and security.
* Led design and development of critical Cisco Manageability services, including:
  + Access Control Layer (ACL) implementation utilizing AuthZ and gNSI Authz services for comprehensive policy management
  + SPIFFE-based authentication and authorization framework, elevating security posture
  + Key architect and primary point of contact for multiple gNSI services including CertZ, CredentialZ, and BootZ
  + Successfully implemented BootConfig gNOI service to streamline device initialization
* Developed scalable services enabling seamless device management throughout the entire lifecycle (Day 0 to Day N), facilitating efficient transitions between multiple operational teams
* Optimized MGBL services for horizontal scalability and reliability, resulting in increased service availability of 99% uptime
* Mentored junior engineers through comprehensive technical guidance and detailed code reviews, enabling them to deliver significant contributions to critical gNOI and gNSI services while successfully implementing complex infrastructure changes

**Senior Software Engineer**, Cisco Systems Sep 2019 – Oct 2021

* Designed and implemented support Secure ZTP (RFC 8572) and a compliant server.
* Defined workflows for Ownership Voucher (OV) (RFC 8366) Generation and Distribution.
* Major contributor in Design of Manufacturer Authorized Signing Authority to generate OVs

**Software Engineer III**, Cisco Systems Jun 2015 – Sep 2019

Zero Touch Provisioning **Technologies** – Python, bash, Docker

* Re-engineered the existing infrastructure, which increase the provisioning speed by 30%.
* Helped increase the feature velocity for that component with code and state coverage of ~80%, reducing the operational costs by 10-fold for the customers.
* Lead and mentored team of 3 Junior engineers, providing technical guidance and code reviews that enabled them to make significant contributions.

SPNAC **Technologies** – *Go, InfluxDB, Kapacitor, Kubernetes, Docker, Kafka, NATS*

* Closed-loop Network automation using telemetry data from switches/routers.
* A network health monitoring app with auto remediation deployed as docker into a Kubernetes cluster.
* Implemented cross-platform communication architecture leveraging both Kafka and NATS message buses to enable seamless data flow between applications and infrastructure components based on their specific protocol requirements.

Telemetry **Technologies** – *C, Python, Splunk, Grafana.*

* Designed and implemented infra and backend for event/data collection on Nexus devices.

**Java Developer**, Kavi Associates Jun 2013 – Jun 2015

Locomotive Road Failure Prediction **Technologies** – *Cloudera, SpringMVC, Hibernate, Spark, SAS*

* Implemented streaming service to gather real-time data from various locomotive sensors and streamed them to HDFS.

Pretium **Technologies** - *Java, Python, Scala, Spring MVC, Ajax, Hibernate., HighCharts.*

* Implemented a code generator for data collection, cleaning, integration, ETL and data viz.

**Full-Stack Developer**, XL Academics **Technologies** - *php, mysql, amcharts* Feb 2012 – May 2013

* Implemented chat, financial manager and spend analyzer like Mint.com for FMHS users.

## Patents

* U.S. Patent No. 11978063 - "Establishing Ownership of Dual Route Processors (RPs) using Secure Zero-Touch Provisioning (ZTP)" - Issued May 7, 2024
  + Innovative solution for secure device ownership validation in dual route processor environments
  + Role: Primary Inventor (with co-inventor Reda Haddad)

**Education**

* M.S in Computer Science - **Northern Illinois University** (GPA – 4.0/4.0) May 2013
* Bachelor of Engineering - **JNTU Kakinada**, **India** (GPA – 3.6/4.0) April 2011

## Technical Skills

* Languages: C, Go, python, Objective-C, SQL, Java
* Databases: MySQL, PostgreSQL, InfluxDB, Prometheus
* Utilize AI-powered tools (GitHub Copilot, Claude) to automate routine development tasks including commit message generation, test creation, and code generation from documentation, significantly improving productivity and code quality

## Certifications

* Deep Learning Nano Degree Foundation Program
* Cloudera Certified Administrator for Apache Hadoop (CCAH)

## Side Projects

* OpenCV: Face recognition, Emotion recognition, Object tracking, Motion detector.
* [Digital augmentation](https://www.youtube.com/watch?v=1A80HsRYXVk)(image overlay) of image/videos on a paper, placed in front of a camera.
* Deep learning: [Image Classification](https://github.com/naren-m/ImageClassification), [Face Generator](https://github.com/naren-m/FaceGenerator), [Language Translation](https://github.com/naren-m/LanguageTranslation), [TV Script Generation](https://github.com/naren-m/TvScriptGeneration), Image styling
* [Tekken-py](https://github.com/naren-m/tekken-py): Python playing [Tekken 7](https://www.youtube.com/watch?v=YAguiUPNKoc&feature=youtu.be).