Tejesh Reddy Sigineni

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Education

- **Arizona State University - Ira A. Fulton Schools of Engineering** Tempe, AZ
  Master of Science - Computer Science; GPA: 4.0/4.0 *08/2021 - 05/2023*
  Relevant Courses: *Algorithms, Statistical ML, Distributed Systems, Blockchain Engineering, Software Security, Cloud Computing*
- **PES University** Bangalore, India
  Bachelor of Technology - Information Science and Engineering; GPA: 3.6/4.0 *06/2015 - 05/2019*
  Relevant Courses: *Data Structures and Algorithms, Computer Networks, Unix and Shell Programming, AI, Design Patterns*

Skills Summary

- **Languages**: Python, C, JAVA, GoLang, JavaScript, ReactJS
- **Web Dev Frameworks**: Flask, Django, Spring, NodeJS, React, JQuery, Handlebars
- **DevOps and Cloud**: AWS, Kubernetes, Docker, GIT, DynamoDB, Terraform, CDK, HELM, OpenStack
- **Databases and Tools**: PostgreSQL, MongoDB, Redis, Spark, UiPath, Kafka, Object Store

Experience

- **CVS Health** Dallas, TX
  Software Development Engineer *01/2023 - Present*
  - **ACAS Claims - RPA**: Collaborated with cross-functional teams to develop a UiPath framework that automatically processes patient claims through business pipelines, resulting in a 30% reduction in processing time.
  - **UiPath Orchestrator REST API**: Implemented a RESTful service architecture to manage, deploy, and trigger multiple RPA robots, ensuring backward compatibility while simultaneously enhancing process automation efficiency.
- **Arizona State University - SEFCOM Lab** Tempe, AZ
  Graduate Research Assistant (Cloud & Firmware Security) - Part-time *11/2021 - 01/2023*
  - **FirmAE**: Contributed to a fully-automated open source framework that is responsible for crawling firmware, emulations, and vulnerability analysis, significantly improving the emulation success rate and discovering new 0-day vulnerabilities impacting multiple devices. Retrieved 80k+ firmware images using firmae-crawler from 100+ hardware vendors.
  - **Greenhouse**: Assisted in a research project under the guidance of Dr. Ruoyu Wang which aims at finding vulnerabilities in binary firmware images when rehosted in a single-service Linux-based user-space emulation (QEMU).
  - **Binwalk**: Integrated binary analysis workflows to reverse engineer and analyze targeted threats on firmware images.
- **Unbxd** Bangalore, India
  Software Development Engineer - Platform/Cloud (Full-time) *07/2019 - 08/2021*
  - **Python Catalog Pipelines**: Developed and deployed several data pipelines to AWS EMR that facilitate catalog indexing and data ingestion to power e-commerce search for 200+ customers.
  - **JS SDK Plugin(Search, AutoSuggest, Rex)**: Contributed to Unbxd opensource e-commerce search, typeahead, and recommendation plugin libraries developed using ReactJS and NodeJS. Which on integration with customer sites have improved sales by an average of 20%.
  - **Named Entity Recognition**: Made contributions in the development of intelligent product recommender systems using TensorFlow and Kubernetes to rank products based on NLP and statistical approaches.
  - **Argo Workflow Triggers**: Architected over 50 event-based workflow triggers developed using Argo, K8s, and Docker for clients to schedule/invoke chron-enabled pipelines using RESTful Service/Dashboard.
  - **PyCoversion Library**: Developed an internal Python library for making API calls to perform single, multipart, and delta uploads of various formats of data to ensure the customer catalog information remains up-to-date on catalog search clusters. The current version is published on PyPi as 0.5.0(pyconversion).
  - **Apache Mesos - Chronos**: Implemented a resilient catalog preprocessing system built on top of the Mesos cluster, featuring a master-slave architecture and server threshold checks. The system ensured continuous operation by re-electing leaders when the master encountered network or GC issues. Developed using Kube, Python and Helm.

Projects

- **Video Recognition Service (Py, AWS, OpenStack)**: Architected and developed a highly scalable video classification service that adheres to CAP theorem principles. Successfully classified over 1k videos in less than 10 minutes. (May '23)
- **AWS Lex Financial Assistant Chatbot (Python, AWS(Lambda, Lex, DynamoDB))**: Built an advanced NLP-based linguistic chatbot that assists end-users and financial institutions to make calculated banking decisions, providing them with insights on several asset classes and market sentiment. (April '22)
- **Social Media Blogging Application (Spring, Java, JavaScript, Docker)**: Architected and developed a CRUD-based social media web blogging application that supports multi-user real-time updates. (April '20)
- **Deep Learning Clickbait Detector (Keras, NLTK, Python, Flask, TensorFlow, JavaScript)**: Designed and programmed a Chrome extension to detect clickbait in articles using a convolution neural network (CNN) as the backend. The model has an accuracy of 88% on the validation/test set. (Jan' 19)

Publications

- **32nd USENIX Security Symposium - Greenhouse**: "Single-Service Rehosting of Linux-Based Firmware Binaries in User-Space Emulation". Published in USENIX Security Symposium at Anaheim, CA '23.