

# Tejesh Reddy Sigineni

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## EDUCATION

### Masters in Computer Science

Arizona State University, Tempe, AZ

Expected May 2023

GPA: 4.00

**Courses:** Algorithms, Data Mining, Statistical Machine Learning, Distributed Database Systems, Blockchain Engineering, Software Security.

### Bachelors in Information Science and Engineering

PES University, Bangalore, India

May 2019

GPA: 3.55

## TECHNICAL SKILLS

#### Languages:

Python, Java, JavaScript, C++, GoLang

#### Web Technologies/Frameworks:

Flask, Django, NodeJS, React, JQuery, Handlebars

#### DevOps Tools:

Amazon Web Services, Docker, Kubernetes, Terraform

#### Database:

MySQL, PostgreSQL, MongoDB, Redis, DyanmoDB

#### Other Tools/Packages:

Git, RESTful API, Keras, Tensorflow, Sciket-Learn, PySpark

## PROFESSIONAL EXPERIENCE

### Graduate Teaching/Services Assistant, ASU, Tempe

Nov 2021 - Jan 2023

- **Technologies used:** Python, Flask, MongoDB, SQLite, Docker, Kubernetes, Binwalk
- Assisting in a research project that aims to perform security analysis of large-scale firmware images and embedded systems when rehosted on a Linux-based virtual machine.
- Developed and deployed over 50 data pipelines on Kubernetes that aims on downloading over 80k firmware images from supported 100+ hardware vendors.
- Integrating several binary analysis workflows to help reverse engineer and analyze a targeted threat on firmware images.

### Software Engineer at Unbxd, Bangalore, India

July 2019 - Aug 2021

- **Technologies used:** Python, JavaScript, AWS, PySpark, Node.js, Flask, Django, MongoDB, SQLite, Docker, K8s, Argo
- Developed and maintained data pipelines that facilitate catalog indexing and data ingestion to power search to over 200+ e-commerce customers.
- Worked on integrating Unbxd e-commerce search, typeahead, and recommendation libraries developed using ReactJS and Javascript to customer e-commerce sites which improved sales by an average of 20%.
- Contributed to the development of intelligent product recommender systems to rank products based on NLP and statistical approaches.
- Architected over 50 event-based workflow triggers for clients in the form of RESTful services to provide flexibility while using chron-enabled pipelines.
- Collaborated with the internal teams for developing uptime and scheduler monitoring dashboard and visualization tools, which reduced the incident resolution time by 70%.

## PROJECTS

### AWS Lex Financial Assistant Chatbot (Python, REST, AWS Lambda, AWS Lex, AWS DynamoDB)

April 2022 - May 2022

- 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.

### Personalized Relevancy System (Python, AWS EC2, Flask, Pandas)

Jan 2021 - April 2021

- Integrated predictive feature-based relevancy system with Apache Solr Search Engine, to rank and display products in descending order of similarity by comparing query features with the indexed catalog features.

### Social Media Blogging Application (Django, Python, JavaScript, Flask, Docker)

March 2020 - April 2020

- Architected and developed a CRUD-based social media web blogging application that supports multi-user real-time updates.

### Deep Learning Clickbait Detector (Keras, NLTK, Python, Flask, TensorFlow, JavaScript)

July 2019 - Feb 2020

- Designed and implemented an easy-to-use 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.

## PUBLICATIONS & OPEN-SOURCE CONTRIBUTIONS

- "Greenhouse: Single-Service Rehosting of Linux-Based Firmware Binaries in User-Space Emulation" (2022). USENIX Security '23 Fall. [bit.ly/sec23fall-usenix-hotcrp-paper-249](https://bit.ly/sec23fall-usenix-hotcrp-paper-249)
- **FirmAE Scraper:** Contributing to building a fully automated python-based web scraper that downloads firmware images and extracts metadata to help with emulation and security vulnerability analysis on the images.