Tejesh Reddy Sigineni

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EDUCATION

Masters in Computer Science **Expected May 2023**

Arizona State University, Tempe, AZ GPA: 4.00

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

Bachelors in Information Science and Engineering **May 2019**

PES University, Bangalore, India 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 Research Assistant at **SEFCOM,** *ASU, Tempe* **Nov 2021 - Present**

- **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 Lamba, 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)* **Jan 2019 - June 2019**

- 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
- **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.
- **FreqTrade:** A blockchain trading project under the GNU. Took initiative in contributing to the project road map and documenting its workflow.