Amala Wilson

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Education

M.S. in Computer Science — Dec. 2021
San Jose State University - *San Jose, CA* — Graduate GPA: 3.6

B.S. in Computer Engineering — May 2016
Purdue University - *West Lafayette, IN*

Skills

Programming Languages:	**Python**, **Java**, ReactJS, **JavaScript**, HTML/CSS, PHP, C, MATLAB
Data Science & Machine Learning:	**Pytorch**, Detectron2, Scikit-learn, **Pandas**, Matplotlib
Databases:	MySQL, MongoDB
Platforms & Version Control:	**AWS**, PBS, Testrail, Spring Framework, Node.js, Express.js Jupyter, **Linux**, **Git** & GitHub

Certifications

Cisco Security Ninja White Belt, Cisco Systems — Aug. 2021
Certification of Achievement, Coding Dojo Web Development Boot Camp — Aug. 2017

Experience

Intern, Zact Inc. - *Saratoga, CA* — Jan. 2021 – Aug. 2021
- Wrote and tested a Python script to automate workflows in JIRA for software and hardware vulnerabilities tracked by a cloud service provider
- Tested the Zact platform on web and iOS apps by running through different use cases and user scenarios in Testrail

Software Engineer Intern, Cisco Systems - *San Jose, CA* — Jun. 2019 – Aug. 2019
- Designed and developed code to provide dynamic and contextual messages to users of Cisco Commerce application
- Reduced response time and cost associated with storing static content in Content Delivery Network (CDN) servers

Publications

- **A. Wilson**, M. Solh, and M. Moh , Exploration of Privacy Preserving Deep Learning Framework for Computer Vision Tasks. *Under review: Association for Computing Machinery (ACM) Southeast Conference 2022.*
- **A. Chirayil**, R. Maharjan and C. Wu, Survey on Anomaly Detection in Wireless Sensor Networks (WSNs), *2019 20th IEEE/ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD)*

Projects

Privacy Preserving Deep Learning for Multiple Computer Vision (CV) Tasks — Fall 2020 & Fall 2021
- Performed systematic review and improved performance (by 2-3 fold) of Dual User-Adaptation (DUA) which is a privacy-preserving federated learning (FL) framework for visual recognition (Manuscript under review)
- Trained models using FedAvg and FedProx on multiple CV datasets to compare DUA with other FL frameworks

Online Banking Web Application — Spring 2020
- Built frontend pages using ReactJS and used Axios to process HTTP requests and responses
- Wrote APIs in PHP to communicate with MariaDB Database to manage data

Comparative Evaluation of Finetuned Faster R-CNN Model on Low-light Images — Fall 2019
- Used EnlightenGAN on low-light images and fed enlightened output into Faster R-CNN to compare its results with results obtained by running inference on low-light images
- Analyzed the performance of Faster R-CNN by incorporating it with different combinations of EnlightenGAN and USM (Unsharp Mask) and CLAHE (Contrast Limited Adaptive Histogram Equalization) image filters
- Utilized transfer learning to finetune Faster R-CNN on the EnlightenGAN output images thereby improving accuracy by approximately 20% on low-light images

Business Context Aware Data Center Monitoring — Fall 2019
- Implemented and trained two logistic regression models on the GWA-T-12 Bitbrains dataset to learn about business process interruption caused by inadequate management of compute and storage resources in a data center
- Collected, analyzed and visualized local system performance metric data using Elasticsearch, Beats, and Kibana to test the two machine learning models; achieved 28% and 98% accuracy for the memory and CPU models, respectively
- Trained and tested a multinomial logistic regression model on MongoDB log data and achieved 69% accuracy

Simplified GUI Calendar in Java — Summer 2018
- Developed a Graphical User Interface (GUI) calendar in MVC architecture using JSwing library in Java that allows users to create events and see the scheduled events

Web Application Hackathon Project — Fall 2017
- Created a web application using Python Django framework and backend database for connecting the victims of the Sonoma County Fire in California with donors