

Felicia Sharon

540 Seminary Row, New York, NY 10027

(646) 251-5407 | in.felicia.sharon@gmail.com | www.linkedin.com/in/felicia-sharon-639162191

EDUCATION

Columbia University

MS in Computer Science, Machine Learning Track

New York, NY

Expected Dec 2025

Vellore Institute of Technology

B.Tech in Computer Science and Engineering

Chennai, India

Jun 2019 - Aug 2023

PROFESSIONAL EXPERIENCE

Amazon

Chennai, India

Software Development Engineer

Mar 2024 - Aug 2024

- Collaborated with 'Digital Payments' team in Amman, Jordan on extending online payment features to various countries - UAE, Egypt, Saudi Arabia and South Africa.
- Resolved 60% of team's internal Software Assurance risks, Shepherd risks and Policy Engine risks.
- Adopted various automation tools - SASHelper, OPEX Healer and Ginger to automate issue mitigation and email notification to team.
- Deployed AWS CloudFormation stacks and verified its creation in AWS Lambda and AWS DynamoDB to fix issues in production. Monitored usage IAM Access keys in AWS CloudTrail to safely enable automatic credential rotation.
- Reduced the Policy Engine risks by 40% upon feature modifications and leveraged internal services - Swagger and Jarvis for validation.

Amazon

Bangalore, India

Software Development Engineer Intern

Jan 2023 - Jun 2023

- Collaborated with 'Artificial Intelligence - Rekognition' team developing an API service called 'AWS-Texttract' - service to automatically extract text, handwriting and data from scanned documents.
- Developed Test Automation - Canary, Unit Testing, Integration testing and Load testing for the 'Bulk Document Uploader' API and deployed it in pipelines and evaluated output and metrics using AWS CloudWatch.
- Validated availability of usage of Texttract API and resource accessibility for various users using AWS S3 and IAM Roles. Raised and reviewed several Code Reviews.
- Enhanced existing pipeline to raise alarms and cut tickets to respective teams automatically in case of any issues.
- Presented a live demo of Test automation to team and panel upon completion.

RESEARCH EXPERIENCE

Columbia University

New York, NY

Research Assistant at GILM Laboratory

Jan 2025 - Present

- Investigating strengths and weaknesses and comparing existing supervised (semi-supervised) and unsupervised learning models using Transfer learning.
- Extending human pose estimation methods found in action detection systems to be utilized for animal behavior studies.
- Evaluating Adversarial Learning approaches for phenotyping animal behavior from videos.

RELEVANT EXPERIENCE

LTIMindtree

Online

Feb 2023 - Apr 2023

- Completed 3-month internship in Cloud Services (AWS) leveraging Terraform.

Amazon

Online

Jul 2022

- Selected by Amazon for Amazon Machine Learning Summer School 2022 to undergo a month of training in Advanced Machine Learning.

NetApp

Online

Feb 2022 - May 2022

- Completed a project 'Smart Eye' deemed as one of 15 best projects during a 4-month mentorship program as part of NetApp Women Hackathon 2022.

FarmWise-AI

Online

Dec 2021 - Jan 2022

- Developed a new Multi-scale Polygon Matching system for Geo Referencing Agriculture lands.

PROJECTS

Smart Assistant for Visually Challenged people

- Designed a system to aid visually challenged people to perform day to day activities by combining Face recognition, Object detection and Image Captioning models.
- Customised existing COCO dataset and Flickr 8k dataset accordingly by adding 20 data samples for each of 8 additional classes utilizing the VGG Image Annotator (VIA) tool.
- Leveraged CNN ResNet-50 for Face recognition, Deep Learning Faster R-CNN ResNet-50 FPN model for Object detection, and CNN ResNet-50 and LSTM for Image Captioning.
- Achieved an accuracy of 80.6% and 92.7% for Face detection and Object detection respectively and a blue score of 0.493(BLEU-1) for Image captioning.

Smart Security Framework using IoT and Computer Vision

- Prototyped a real time cost effective device to monitor environment using Arduino UNO and IOT sensors.
- Developed a Weapon detection system in backend leveraging R-CNN models on a self-created dataset.
- Designed to send SMS notification and an email with a link to live-feed of environment in events of intruders or people in possession of weapons.

IoT Framework for Real Time Weather Monitoring using ML

- Built a cost effective prototype using Arduino UNO and IOT sensors to read real-time temperature, pressure and humidity.
- Trained ML models - Decision tree and Random Forest on weather dataset to predict weather given real-time weather parameters gathered by prototype.
- Forecasted weather parameters for next 24 hours deploying Auto ARIMA model and predicted weather using ML models.
- Evaluated Random Forest and Decision Tree models based on Accuracy, Precision, Recall and F1-Score and concluded Random Forest with accuracy 70.74% is better than Decision tree with accuracy 59.9%.

Exploring Generative Adversarial Networks

- Researched various applications of different types of Generative Adversarial Network (GAN) - Stack-Gan and Semi-supervised GAN.
- Leveraged Stack-GAN to create 256×256 photorealistic images conditioned on text descriptions.
- Devised a Semi-supervised GAN model imbedded with k-Nearest Neighbor (kNN) algorithm to add most relevant samples of minority class to original imbalanced dataset to resolve Multi-class imbalance.
- Concluded devised Semi-supervised GAN model to be better than SMOTE based on accuracy of Decision Tree on dataset balanced by Semi-supervised GAN (93%) and SMOTE (90.3%).

Online Shopping portal with Market Basket Analysis

- Built an online grocery shopping website leveraging HTML, CSS, Java Script, Php and Ajax for user-interface and MySQL for storing user data and inventory in a database and Python.
- Incorporated a Machine learning technique called Market Basket Analysis where frequently occurring purchases are analyzed, thereby acquiring foreknowledge of customer behavior and recommending products most likely to be bought by customer.
- Formulated Association Rules using Apriori algorithm in Python and integrated it with user-interface.

SkincareLab - Skincare Learning and Test Platform

- Built an interactive learning platform where users can learn about skincare types, routines, ingredients, and skin concerns through dynamic educational content.
- Used Flask to handle routing, backend logic, and integrate the frontend with a lightweight server architecture, and HTML, CSS, Bootstrap, JQuery, and JavaScript to deliver a clean, responsive UI that works across devices.
- Stored the user quiz results and the skincare routine they built, in the backend using AJAX in .json file format.

PUBLICATIONS

F. Sharon, A. V. P. Y and Geetha. S, IoT Framework for Real Time Weather Monitoring using Machine Learning Techniques, IEEE Xplore 2023, doi: 10.1109/ICEEICT56924.2023.10156901.
<https://ieeexplore.ieee.org/document/10156901>.

F. Sharon, S. Sellamuthu, N. S and A. V, Framework for Face recognition and Scene Description using Deep Learning for Visually Challenged people, IEEE Xplore 2024, doi: 10.1109/ICERCS57948.2023.10434146.
<https://ieeexplore.ieee.org/document/10434146>.

SKILLS

Languages: Python, C/C++, Java, JavaScript, React, HTML/CSS, PHP, MySQL, Hadoop, R, Node.js, Angular, TypeScript, PostgreSQL.

Frameworks: Keras, TensorFlow, OpenCV, Scikit-learn, PyTorch, Hadoop, React, Flask, Angular.

Technical: Data Structures and Algorithms, Object oriented design, Relational Database, Statistics, Calculus, Artificial Intelligence, Machine Learning, Data Science, Data Analytics, Model Building, Transfer Learning, ETL, Block Chain, Quantum Computing, Natural Language Processing, Large Language Models, BERT, Generative AI, Amazon Web Services AWS, Terraform, Linux, UI/UX Design, Web Development, CI/CD pipeline, Block Chain, Computer Vision, Deep Learning, Generative Adversarial Networks (GAN), Kubernetes, Docker, Git, Test Automation, DevOps, REST API, React, TensorFlow, Distributed Computing, Data Visualization, Big Data Analysis, Neuroscience, Frontend, Backend and Full Stack Development.

Tools: Tableau, PowerBI.

General: Problem Solving, Logical Thinking, Interpersonal Skills, Organizational skills, Positive Attitude.

Interests: Piano (Certified Grade 5 pianist by Trinity College, London), Chess, Badminton.