# RAHAVEE PRABAKARAN

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**https://github.com/rahaveep**

**SUMMARY:** Computer Engineering graduate student adept at Analytical and leadership skills. Have prior experience working on academic projects based on Machine Learning, Data Engineering and Computer Vision.

## EDUCATION

**Master of Science in Computer Engineering** *May '23*
Arizona State University, Tempe, Arizona

**Bachelor of Engineering in Electronics and Communication Engineering** *June '21*
Anna University, GPA**: 8.53/10** Chennai, India

**Major Coursework:** Python Programming, Data Structures, Foundations of Algorithms, Machine Learning, Machine Vision & Pattern Recognition, Artificial Neural Computation, Data Processing at Scale, Security& Privacy Network systems, Principles of Management.

## PROFESSIONAL & RESEARCH EXPERIENCE

**Android Development Intern** *June '20 – July '20*
**Smarther** Chennai, India
Designed and developed Android based Mobile Application using JAVA, Android Studio and MySQL database.
The application enables users to register complaints, place maintenance requests and for the administrators to view the same.
Developed UI for the application by incorporating Linear Layout, Relative Layout, Frame Layout, Grid View, List View.
Assisted in performing database CRUD operations thereby gaining exposure to understand MySQL database.

**Attacks Against Voice Assistants – *A Survey (Research Study)*** *Jan'22-May'22*
**Arizona State University** Tempe, Arizona
Carried out research on voice security and voice assistants by reading up to 30 research papers and built a survey paper on "Attacks against voice assistants" detailing the classification scheme for the paper. Summarized the survey techniques, identified the trends in the surveyed area, explained the threat model and also summarized about possible future work.

## TECHNICAL SKILLS

**Programming & Databases**: Python, C, C++, SQL, MySQL, PostgreSQL
**Software**: Jupyter Notebook, PyCharm, VSCode
**Libraries & Frameworks**: Scikit-learn, NumPy, Pandas, OpenCV, Matplotlib, Flask, Apache Spark
**Deep Learning Platforms**: TensorFlow
**OS & Project Tools**: Windows, Linux, Git-GitHub

## PROJECTS

**Prediction of Production Quantity of Maple syrup (Machine Learning, Data Engineering)**
Developed two prediction models, built with Random Forest, and XGBoost respectively that predicts the production quantity of Maple syrup. Performed data pre-processing, data visualization, and data engineering tasks before fitting the dataset to the various models. Used real time production data of Maple syrup and considered several factors such as temperature, ndvi, precipitation, and soil moisture to predict the production quantity. Achieved 98.29% and 97.96% accuracy respectively.

**Feature Extraction of VGG-19 (Computer Vision)**
Qualitatively assessed the performance of VGG- 19 by training two identical networks trained on CelebA dataset labeled for different image attributes and visualized intermediate feature maps as heat maps. The intermediate feature maps for the first model (trained for Smile Vs No Smile) were looking for features around the mouth and the second model (trained for Male Vs No Male) were looking for features around the eyes. Studied the structural differences between the networks by extracting weights and bias matrices of single layers in a network structure from all the networks saved during the training process and arranging them in an array**.**

**Gender Recognition Using OpenCV (Computer Vision)**
Developed a web application to classify images as Male and Female using Haar cascade classifier, Support Vector Machine, OpenCV, Pandas, NumPy, Scikit-learn, PIL and Flask. Performed image resizing, cropping and conversion into gray scale image. Obtained a model of accuracy 91.6%. Developed web server gateway in Flask and integrated the Machine Learning Model to Flask to obtain the Face Recognition Project.

**Client Subscription Prediction (Machine Learning, Data Engineering)**
Developed three machine learning models to predict if the customers of a retail banking institution will subscribe to term deposits. Performed data pre-processing, data visualization, normalization to prepare the data. Applied Logistic Regression, KNN, Naive-Bayes classification algorithms to train the model. Achieved 83.78%,82.16% and 82.96% accuracy respectively.