

## Shri Keshavinee R

### Contact:

Email: [shrikeshavinee@gmail.com](mailto:shrikeshavinee@gmail.com)

LinkedIn: [linkedin.com/in/Keshavinee](https://www.linkedin.com/in/Keshavinee)

Github: [github.com/Keshavinee](https://github.com/Keshavinee)

### Education:

I'm pursuing an undergraduate degree in computer science and engineering in Sri Sivasubramaniya Nadar College of Engineering, Chennai. My [CGPA](#) is 9.054. The courses attended are Algebra and Calculus, Complex Functions and Laplace Transforms, Discrete Mathematics, Programming in Python, C, Java, Data Structures, Digital Principles and System Design, Unix and Shell Programming, Operating Systems, Computer Organization & Architecture.

I'm also pursuing an online bachelor's degree in Data Science in Indian Institute of Technology, Madras. I've completed a diploma in programming with [CGPA](#) 8.5. The courses attended are Probability and Statistics, Mathematics for Machine Learning, Computational Thinking, Modern Application Development, Database Management Systems, Machine learning foundations, Tools in Data Science, Business Data Science and Machine learning techniques.

### Skills:

- Languages: C,C++, Python, Java, HTML, CSS, JavaScript, SQL, Bash
- Frameworks: Numpy, Scikit, Pandas, Java Swing, Flask
- Tools: GIT, PostgreSQL, MySQL, SQLite, Tableau
- Platforms: Linux, Windows

I'm proficient in above mentioned skills.

### Projects:

1. I participated in the ImageCLEF task (Multimedia Retrieval in CLEF - 2022) and published a paper on "A Fusion Approach for Web Search Result Diversification Using Machine Learning Algorithms". Result diversification provides a broader view of a search topic while also increasing the possibilities of finding relevant information. It has been shown to increase user satisfaction in recommender systems and web searches. Many different approaches have been proposed in the related literature for the diversification problem. Since the web search result is enormous, it is essential to have an efficient fusion approach. Hence, the objective of this paper is to propose the implementation of a fusion model based on KNN,

CART, and SVR regressors. This fusion model aims to improve the accuracy and reduce the error value of the generated result. To improve the accuracy of the results of the inducers, three regressors were implemented in the voting regressor. The model was trained on data from 56 different inducers, containing 167,139 training values, and tested on data from 56 inducers, containing 175,591 testing values. The base regressors obtained MAE values of 0.004 for KNN, 0.003 for CART, and 0.085 for SVR. The voting regression yielded an MAE of 0.017. Among the implemented regressors, CART provided the optimized result. Of the 10 best submissions, the best F1 score and CR score are 0.5634 and 0.4414 respectively. After publishing this paper, I had great learning in different machine learning models. [Link to the paper](#)

2. It is about bringing together a cane, smartphone camera, and basic projection system to turn any wall in the classroom into a smart wall. Teachers who use a basic projector (NOT SMARTBOARDS) to teach in the classroom are bound to the computer to control and navigate a lesson. Sometimes the systems do not face the classroom forcing teachers to have their back to the classroom making it difficult to manage the environment. We developed a tool by leveraging computer vision libraries, "OpenCV", and "media pipe" to enable a simple computer and projection systems to behave like a smartboard leveraging commonly available local tools The solution should include the following features:
  - 1) Leverage Machine Vision enabling computers that are controlled by human hands by recognizing writing on the board using hands and such and digitally recognizing them as inputs.
  - 2) Detects the hands like a mouse pointer to click or interact with what is displayed.

This project helped me to learn Machine learning concepts and Python very well.

[Link to the project](#)

Other projects:

3. I did a project on a Graphical Password Authentication system with my friends. We developed a web application. I took care of the backend part, used the Django framework (written in Python) and wrote code in javascript for client-side scripting. This project helped me to learn Python, HTML, CSS, and Javascript. We used a recognition-based graphical password scheme. It creates a platform for the user to select pictures from a variety of images provided, during authentication the user is asked to recognize the previously selected images to gain access. We are yet to publish the paper.

**Awards:**

Winner at Smart India Hackathon 2022 - won cash prize of Rs. 100000

**Research Interests:**

I'm planning to do an MS in Robotics and Computer Vision. As the first step toward my immediate academic goal, I took a project on building a robotic arm for the removal of weeds in a farm field. In the Indian agricultural industry, weedicides are sprayed on the crops collectively without taking into consideration whether weeds are present. Due to this, crop-yielding plants are also damaged. To avoid such situations and to improve food quality and productivity, it is necessary to have a system that removes only the weeds. With the help of an automatic weed removal system using a robotic arm, it is possible to remove the weed more precisely rather than spray weedicide over the whole field. First, a mapping module will be designed using Robot Operating System (ROS) and a camera with raspberry pi. Then an image segmentation system will be designed using a deep learning model for semantic segmentation of a captured image. The position of weeds will be determined using ROS. And a robotic arm will be employed to pluck the weeds.