

# Bharadwaj Ketham

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## Education:

- **Master's in Computer Science (Pursuing)**  
University of Central Missouri  
**Relevant Coursework:** Machine Learning, Data Structures and Algorithms, Operating Systems, Artificial Intelligence, Cloud Computing.
- **Bachelor of Technology in Electronics and Communications**  
Vel Tech Rangarajan Dr. Sagunthala RD Institute of Science and Technology, Chennai, India

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## Skills and Activites:

- **Programming Languages:** Python (Proficient).
- **Machine Learning and Artificial Intelligence (AI):** Supervised Unsupervised Learning, Deep Learning, Neural Networks, Data Preprocessing.
- **Software Engineering:** Data Structures, Algorithms, and Object-Oriented Programming.
- **Data Science:** Statistical Modeling, Text Mining, Image Processing, Web Scraping.
- **Database Management:** Having basic knowledge on SQL.
- **Libraries and Frameworks:** Scikit-Learn, NumPy, Matplotlib, Pandas, Keras, TensorFlow, Beautiful Soup, Django.

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## Projects:

1. **Traffic Signal Detection suing Yolo Algorithm (Technologies used: Machine Learning, Deep Learning, Python, OpenCV, TensorFlow, Computer Vision)**
  - Developed a real-time traffic signal detection model trained on 5,000+ images.
  - Achieved an 80% prediction accuracy using Python, OpenCV, and TensorFlow.
  - Championed the implementation of computer vision methodologies with OpenCV that facilitated the identification of traffic signals in real-time, providing crucial data.
2. **DEEP LEARNING BASED BEHAVIOUR MONITORING IN CLASSROOM ( Machine Learning, Deep Learning, Python, OpenCV, TensorFlow, Computer Vision)**
  - Constructed a custom dataset from in-class facial data, improving behavior prediction accuracy by 25% and providing actionable insights for instructional optimization.
  - Achieved 90% accuracy in student behavior detection, with the integration of smart attendance as a key feature.
  - Constructed a cutting-edge behavior recognition model with OpenCV, analyzing user interactions in real-time; this initiative reduced error rates in facial detection by 25%, leading to a more reliable application performance.
3. **ANALYSIS OF DEEP LEARNING BASED OPTIMIZATION TECHNIQUES FOR ORAL CANCER DETECTION ( Deep Learning, Transform Techniques, Scikit-learn, TensorFlow, Computational Intelligence)**
  - Harnessed Python and Scikit-learn for data processing and TensorFlow for deep learning model training.
  - Enhanced oral cancer detection accuracy through the integration of classification algorithms and transformation techniques in a sophisticated optimization model.
  - Elevated prediction accuracy from 80% to 92% in preliminary testing by applying advanced transform and optimization methods.
4. **Loan Amount Prediction Using Multivariate Linear Regression(Technologies used: Machine Learning, Python, Scikit-learn, Pandas, NumPy)**
  - Designed a predictive model for loan amounts using multivariate linear regression, leveraging borrower income, credit scores, and demographic data.
  - Preprocessed a government-provided dataset with 50,000+ records, handling missing values, encoding categorical variables, and normalizing features.
  - Achieved a Mean Absolute Error (MAE) of 5.2% and an R-squared score of 0.87, ensuring high prediction reliability.
  - Provided actionable insights into key factors influencing loan approval, assisting financial institutions in streamlining decision-making processes.

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**Publications:**

- Bharadwaj, K., "Analysis of Deep Learning based Optimization Techniques for Oral Cancer Detection," 2023 4th International Conference on Electronics and Sustainable Communication Systems (ICESC), Coimbatore, India, pp. 1550-1555, 2023
  - Bharadwaj, K., "Anomaly Detection Using Supervised Classifiers Combined with Feature Clustering Techniques." International Conference on Neural and Advanced Technologies, 2021.
  - Bharadwaj, K., et al. "Investigation on Enhancing the Binary Classification Accuracy of Supervised Classifiers Using Various Transform." Journal of Applied Science, vol. 1084, no. 1, pp. 012032, 2021.
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