KUNJAL AGRAWAL

+91 7058785752 | kmagrawal@ucdavis.edu | linkedin.com/in/kunjal-agrawal-8b5848206 | https://github.com/kunjal2002

EDUCATION

University of California, Davis   Davis, CA
M.S. in Computer Science   *Expected May 2026*

Vishwakarma Institute of Technology, Pune   Pune, India
B. Tech in Information Technology, CGPA: 9.23/10.0   *May 2024*

PROJECTS

Authentication System Using Facial Recognition and QR Code

- Developed a permission-based application using **Python** and **OpenCV to avoid unauthorized access to resources**.
- Implemented image preprocessing techniques to convert images from BGR to RGB, optimizing image processing efficiency.
- Achieved **98% accuracy** in user access control, significantly reducing unauthorized access and improving system security.

Traffic Sign Classification Using CNN

- Developed a classification system using **Convolutional Neural Networks (CNN)** on the German Traffic Sign Recognition Benchmark (GTSRB) dataset to identify various traffic signs.
- Pre-processed the input data, including image resizing and data augmentation, using Python libraries such as OpenCV and **TensorFlow** to prepare the data for CNN model training.
- **Achieved 93% accuracy** on the classification task, demonstrating proficiency in machine learning techniques, data analysis, and image processing.

Conversion of Ambiguous Grammar to Unambiguous Grammar Using Parse Tree

- Led a team of four while concurrently developing the back-end module of the project.
- Developed a system to identify and resolve ambiguity in sentences using **Python**, **NLTK**, and natural language processing techniques.
- Implemented **tokenization**, **part-of-speech tagging**, and dependency parsing to analyze sentence structure and identify potential sources of ambiguity.
- Successfully transformed ambiguous sentences into unambiguous forms with a **90% accuracy** rate.

SKILLS

Programming Languages: Java, Python, JavaScript, React.js, HTML, CSS, SQL

Tools: JIRA, Confluence, Jenkins, Git, Docker, MS Excel, Tableau
Other: TensorFlow, REST APIs, Microservices, Agile

EXPERIENCE

Research Assistant   VIT, Pune   **January 2023-August 2023**

- Analyzed and evaluated clustering techniques, including **outlier influence** on cluster formation, under the guidance of a professor.
- Developed two novel clustering methods using **Python and Scikit-learn libraries**, implementing efficient data processing and model building.
- Measured the accuracy of the developed methods, **achieving an 88% accuracy** rate on the Fisher Iris dataset, demonstrating effective algorithm design and evaluation.
- Presented research at the **IEEE ICSCC 2023 conference**, highlighted the real-world impact of our work on the field of clustering and outlier detection.

Software Engineer Intern   HSBC Technology India   **July 2023-December 2023**

- Designed and implemented **RESTful APIs** using **Java** and **Vert.x**, enabling seamless integration with existing EzyOps version.
- Utilized **SQL** to efficiently query and manipulate data within the Oracle database, ensuring data integrity and consistency.
- Developed a user-friendly frontend interface using **React.js**, **HTML**, **CSS**, and **TypeScript** and collaborated with a diverse team of developers, designers and project managers to integrate the service with EzyOps.
- Successfully deployed and tested the EzyOps Car Pool system using **Jenkins**, contributing to a **40% increase** in customer satisfaction through improved user interface.

PUBLICATIONS

- K. Vayadande, P. Sangle, K. Agrawal, A. Naik, A. Mulla and A. Khare, "Conversion of Ambiguous Grammar to Unambiguous Grammar using Parse Tree," *2023 International Conference on Inventive Computation Technologies (ICICT)*, Lalitpur, Nepal, 2023, pp. 1039-1046, doi: 10.1109/ICICT57646.2023.10134096. - Link
- Ghadekar, Premanand, Kunjal Agrawal, Adwait Bhosale, Tejas Gadi, Dhananjay Deore, and Rehanuddin Qazi. "A Hybrid CRNN Model for Multi-Class Violence Detection in Text and Video." In ITM Web of Conferences, vol. 53. EDP Sciences, 2023. - Link
- P. Dhabe, A. Kamble, K. Agrawal, S. Jadhav, T. Katale and U. Anuse, "New Approaches to Robust Homogeneous And Clearly Identifiable Cluster Creation," 2023 9th International Conference on Smart Computing and Communications (ICSCC), Kochi, Kerala, India, 2023, pp. 428-433, doi: 10.1109/ICSCC59169.2023.10335021.- Link