Kunal Chawla

B.E. - Computer Science
Artificial Intelligence & Machine Learning
Chandigarh University, Punjab

+46-764180878
kcchawla85@gmail.com
Github-kcchawla85
LinkedIn- Kunal Chawla

PROFESSIONAL SUMMARY

Highly motivated and skilled Computer Science engineer with a strong foundation in computer science concepts, programming languages, software development, and machine learning. Experienced in embedded software development, object-oriented programming, web development and database management system. I possess a keen eye for detail and a passion for creating effective and scalable solutions.

EXPERIENCE

- **VOLVO CARS CORPORATION** ***Jan. 2023 – Present***
  Software Engineering Consultant Gothenburg, Sweden
  - Working on the implementation of the **OneEngine (OE)** solution for vehicle **Software Download (SWDL)** and diagnostic communication in manufacturing as a consultant on behalf of **DevPort AB**. This involved **hands-on testing** and **script development**, **utilizing Bosch tools such as GradeX and VCATS** within a box car environment.
  - Integrating valuable knowledge and experience from Siig to enhance project outcomes. Appling expertise in **fault tracing, script programming, and consideration of process prerequisites**, contributing to the overall success of the OneEngine solution.
  - Working on a **comprehensive testing process, encompassing fault tracing, script programming, and addressing process prerequisites (work height, work zone, variant, etc.)**. Ensuring seamless integration by connecting the structure to process steps, and accurately estimating the time required for each stage.
  - Utilizing a variety of tools throughout the testing process to streamline workflow and improve efficiency. Contributing to the optimization of software quality and manufacturing processes**, emphasizing a results-driven approach to project development and implementation**.
  - **Tech stack:** Python, Github, Docker, Vector, Victoria, Jenkins, Gerrit, Jira, CAPL, CANoe, Agile Method, Canalyzer

- **VOLVO CARS CORPORATION** ***Aug. 2023 –Dec. 2023***
  Software Development Intern (Autumn Intern 2023) Gothenburg, Sweden
  - Proficient in **automating manual test cases** with **CAPL ,** cutting test execution time and enhancing efficiency.
  - Developed and **automated Job analysis of Job Id's**, leading to automating 50% of the work done for analyzing the jobs as well as increased the efficiency of the team by 25%.
  - Optimizing build quality assessment and workflow efficiency. Ensured the **reliability and effectiveness** of the Hardware In Loop Robust Integration and Governance System (HIL RIGS)
  - Created a **system independent CI/CD pipeline** using **Gerrit and Jenkins** to run python scripts without interference
  - **Tech stack:** Python, Github, Docker, Vector, Victoria, Jenkins, Gerrit, Jira, CAPL, CANoe, Agile Method, Canalyzer

- **BORNMONKIE** ***May. 2022 – Jul 2022***
  Game Development Intern Hyderabad, India
  - Conducted research and provided **data driven valuable insights** such as total retention time on the app, total number of players playing at a particular moment on the app and which games are liked by the customers and designed an **interactive dashboard** for stakeholders.
  - Developed a **shooting game** using Unreal Engine-5 and established a **Continuous Integration/Continuous Deployment pipeline** utilizing **Gitlab** and **Docker** for the game's operation on **CentOS7** Linux System.
  - **Tech stack:** Python, MS Excel, Gitlab, Docker, Unreal Engine-5, Power BI, C++, Linux (CentOS 7).

EDUCATION

- **Bachelors of Engineering in Computer Science with Specialization in Artificial Intelligence and Machine Learning**, Chandigarh University, Punjab, India **8.57/10 (C.G.P.A)**
- **Senior Secondary School**,
  Rajiv International School, Mathura, Uttar Pradesh, India **91/100(Percentage)**

TECHNICAL SKILLS

- **Programming**: Python, C++, Java, C, JavaScript, HTML5, CSS, CAPL, Flutter, DART
- **Libraries and frameworks**: ReactJS, Node.js, Express.js, Bootstrap, JSON, jQuery, RESTful API, Redux, ES6
- **Database management**: MySQL, PostgreSQL, MongoDB

- **Cloud Platform**: Trailhead(Salesforce), Kubernetes, Jenkins, AWS
- **Miscellaneous**: Gitlab, GitHub, Docker, CANOe, CANAlyzer, Victoria, Vector, Jira, Agile Method, Artifactory, Confluence, CARweaver, WEKA Unreal Engine-5*, Unity* * *Elementary proficiency*

PROJECTS

- **MOODIFY** *Winter 2023*
  Team Project GitHub
  - Developed and implemented an **emotion detection algorithm** for Moodify using **deep learning**, achieving impressive performance metrics: **Recall 89.4%, Precision 88.7%, and Accuracy 89.2%**.
  - **Designed a user-friendly interface** allowing seamless text input for emotion analysis. Users can input text manually or via copy-paste, ensuring accessibility for diverse users.
  - **Pioneered real-time emotion analysis**, providing instantaneous insights into the emotional tone of input text. This feature enhances Moodify's utility for monitoring **social media sentiment** and **analyzing customer feedback in real-time**.
  - **Tech Stack:** Python, Streamlit, MS Excel.

- **StreetSafe** *Summer 2023*
  Team Project GitHub
  - Engineered and **deployed a Pothole Detection Android Application** with seamless download options via APK File or Play Store, ensuring widespread accessibility for Android users.
  - Implemented an **intelligent alert system** within the application**, utilizing alarms to promptly notify users** about detected potholes. This feature enhances road safety by providing timely warnings to drivers and pedestrians.
  - Demonstrated exceptional accuracy in pothole detection, **achieving a remarkable 96.7% accuracy rate**. This high precision underscores the reliability and effectiveness of the application in identifying road hazards, contributing to improved infrastructure maintenance and public safety.
  - **Tech Stack:** Java, Python, MobileNet, Single Shot MultiBox Detection, CNN, Android Studio, Tensorflow API.

- **CryptoVerse** *Summer 2023*
  Personal Project GitHub
  - Engineered **a cutting-edge Web3-based application** facilitating cryptocurrency mining and educational access. The application empowers users to seamlessly explore **Web3 technologies, Blockchain, Decentralized Applications (DApps), and Internet Computer (ICP)**.
  - Spearheaded the creation of a decentralized financial platform, DBANK, drawing inspiration from Compound. Implemented advanced features using **Motoko language**, **Candid user interface**, and orthogonal persistence.
  - Successfully integrated innovative technologies to create a robust and secure platform. The Web3 application not only provides users with the ability to mine cryptocurrencies but also serves as an educational hub, fostering a comprehensive understanding of emerging technologies in the decentralized space.
  - **Tech Stack**: React.js, Node.js, Redux, ES6, Express, MongoDB Atlas, Difinity.

PUBLICATION

- **MOODIFY: Web Application to Detect Human Emotions** *October 2023*
  IEEE *Link*
  - Developed and implemented an **emotion detection algorithm** for Moodify using **deep learning**, achieving impressive performance metrics: **Recall 89.4%, Precision 88.7%, and Accuracy 89.2%**.
  - **Pioneered real-time emotion analysis**, providing instantaneous insights into the emotional tone of input text. This feature enhances Moodify's utility for monitoring **social media sentiment** and **analyzing customer feedback in real-time**.

- **SafePath: Artificial Intelligence Based Pothole Detection Application** *October 2023*
  IEEE *Link*
  - Spearheaded the **development of a groundbreaking mobile application** leveraging cutting-edge technologies, including **Transfer Learning, Single Shot Multibox Detector (SSD), and Tensorflow**. The application revolutionizes road safety by predicting potholes, enhancing navigation, and proactively addressing infrastructure challenge
  - Engineered an exceptionally **efficient and user-friendly algorithm**, achieving an impressive **accuracy rate of 96.7%**. The algorithm not only prioritizes accuracy but also **minimizes latency**, ensuring **real-time pothole detection** for swift and effective response.