

Kunal Chawla

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Profile

A highly motivated and computer science engineer with a strong foundation in computer science concepts, programming languages, software development and machine learning. Skilled in web development, object-oriented programming, and database management, with a keen eye for detail and passion for creating effective solutions.

Experience

• VOLVO CARS CORPORATION

Software Development Intern (Autumn Intern 2023)

Aug. 2023 – Present

Gothenburg, Sweden

- Embarking on an exciting journey with cutting-edge technologies such as **Machine Learning, AI**, and **Data platforms**.
- Will be contributing my expertise to the development of future car platforms, with a special focus on **revolutionizing batteries** and **power electronics**, shaping the future of **sustainable transportation**.
- Developing **software solutions**, executing **meticulous tests**, and seamlessly integrating diverse systems, ensuring **flawless performance** and driving user-centric experiences.
- Tech stack: Python, Github, Docker, React, Node.js, .NET Framework.

• BORNMONKIE

Game Development Intern

May. 2022 – Jul 2022

Hyderabad, India

- Researched and gathered valuable information for the company.
- 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** to be presented to the 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).

• MICROSOFT

Project Intern (Apprenticeship)

Dec. 2020 – Feb 2022

Hyderabad, India(Remote)

- Completed a rigorous **apprenticeship program** with **Microsoft**, gaining hands-on experience in both **front-end** and **back-end development** of websites.
- Developed proficiency in utilizing the **MERN stack (MongoDB, Express.js, React.js, Node.js)** along with **HTML**, **CSS**, and **JavaScript** to create dynamic and interactive web applications.
- Designed and developed an **e-commerce website** named Shopoholics, incorporating **product catalog**

management, secure payment processing, and responsive user interface design.

- Built a **job searching website** utilizing the **MERN stack**, allowing users to search, filter, and apply for job listings, while implementing **user authentication** and seamless **data management**.
- Successfully **deployed** the e-commerce website on the internet, ensuring **scalability** and **optimal performance**.
- Tech stack: Github, HTML, CSS, Javascript, MongoDB, Express Js, Node Js, React.

Education

- **B.E Computer Science with Spl. in Artificial Intelligence & Machin Learning** **Apr. 2020 – Jun 2024**
Chandigarh University, Gharuan, Punjab, India C.G.P.A : 8.52/10
- **Senior Secondary(Class 12th), CBSE Board** **Apr. 2018 – Apr 2019**
Rajiv International School, Mathura, Uttar Pradesh, India Percentage : 91%
- **Secondary(Class 10th), CBSE Board** **Apr. 2016 – Apr. 2017**
Rajiv International School, Mathura, Uttar Pradesh, India C.G.P.A : 10/10

Technical Skills

- **Programming:** C++, Python, Java, C, JavaScript, HTML5, CSS, Flutter*
- **Libraries and frameworks:** React, Node.js, Express.js, Bootstrap, JSON, jQuery, RESTful API
- **Database management:** MySQL, PostgreSQL, MongoDB
- **Cloud Platform:** Trailhead(Salesforce), AWS*
- **Miscellaneous:** WEKA, Gitlab, GitHub, Docker, phpmyadmin*, Unreal Engine-5*, Unity*

** Elementary proficiency*

Projects

- **StreetSafe: AI based pothole detection Application** *Summer 2023*
Team Project [GitHub](#)
 - Developed a **pothole detection android application**, which can be **easily downloaded** into the **android** operating system directly through the **APK File** or from **Play Store**. This application is able to alert the users about the potholes by using an **alarm** and has an accuracy of **96.7%**.
 - **Tech Stack:** Java, Python, MobileNet, Single Shot MultiBox Detection, CNN, Android Studio, Tensorflow API.
- **Moodify- Web Application for Emotion Detection** *Summer 2023*
Team Project [GitHub](#)
 - Developed and deployed **Moodify**, a web application for **emotion detection**, utilizing **machine learning** algorithms such as **Multinomial Naive Bayes** and **Logistic Regression**.
 - Utilized **Python, Streamlit, Joblib, Pickle**, and various libraries including **Neattext, SQLite 3, NumPy, Pandas, Matplotlib, Scikit-learn**, and **Seaborn** in the development process.

- Implemented a **deep learning** model to analyze text features and predict emotions, resulting in an accuracy of **89.2%**.
- Designed an **intuitive interface** allowing users to input text and receive accurate emotion predictions, facilitating better understanding of the emotions conveyed through textual communication.
- **Tech Stack:** Python, Streamlit, Joblib, SQLite 3.

➤ **RideEase-Application for cab booking**

Winter 2022

Personal Project

[GitHub](#)

- Developed a **taxi booking service app** using **Flutter**. Fetched and implemented API's of **Google Maps, GeoLocator, Places API** and **Direction**.
- Handled **GeoFire Query** and generated **Firebase Cloud Messaging** token for each device. Integrated a payment gateway into the app.
- Handled Message requests for new rides and for a selected driver.
- **Tech Stack** – Flutter, Android Studio, Firebase, Java

➤ **StockProphet-A stock price prediction application**

Winter 2022

Team Project

[GitHub](#)

- Developed and deployed a web-based application, for **analyzing** and **predicting stock prices** using machine learning techniques.
- Utilized **Python** and various libraries including **NumPy, Pandas, Matplotlib, Keras, TensorFlow, LSTM** and **Scikit-learn** for data analysis, visualization, and modeling and secured an accuracy of **98%**.
- Implemented **technical analysis** and **visualization techniques** to identify **stock market trends** and patterns, allowing users to make informed investment decisions.
- **Collaborated** with a team to deploy the application using **Streamlit** deployment services, ensuring accessibility and **user-friendly** interaction.
- **Tech Stack** – Python, Streamlit, Heroku App, Tensorflow, Keras, LSTM.

➤ **CineMatch: A movie recommendation system**

Summer 2022

Personal Project

[GitHub](#)

- Developed and deployed a movie recommendation web application utilizing **machine learning, soft computing**, and **neural networks**, achieving an **accuracy** of **96%**.
- Utilized **Python** and various libraries including **Pandas, NumPy, Ast, CountVectorizer, Streamlit, Pickle**, and **Requests** for **data processing, model training**, and user interaction.
- Created a movie recommendation system that effectively suggests movies based on **user preferences**, enhancing the overall **movie-watching experience**.
- Deployed the application using Heroku App, **ensuring seamless accessibility** and **user-friendly interface**.
- **Tech Stack:** Python, Heroku App, Pandas, NumPy, Ast, CountVectorizer, Streamlit, Pickle, Requests.

➤ **MeetVerse: Online video calling application**

Winter 2022

Team Project

[GitHub](#)

- Developed MeetVerse, a **meeting platform** with **smart features**, including **gesture control**, and

avatar simulation using **motion capture technology**.

- Utilized **Mongodb, Express js, React js and Node js** for the development of the platform, ensuring seamless integration of front-end and back-end components.
- Employed **Blender** for avatar creation, providing users with a **unique** and interactive meeting experience.
- **Collaborated** with a team to ensure the platform's accessibility and **user-friendly interface**, enabling free access for all users.
- **Tech Stack:** MongoDB, Express.js, React , Node.js, Blender

➤ **Shopoholic: An E-commerce Website**

Winter 2022

Personal Project

[GitHub](#)

- Developed and deployed an **end-to-end e-commerce website** called Shopoholics, offering a wide range of shopping categories including earrings, purses, watches, and school bags.
- Utilized **HTML, CSS, and JavaScript** to create a visually appealing and **user-friendly interface** for seamless online shopping experience.
- Implemented **secure payment gateways** and ensure **smooth transaction processing** for customers.
- Implemented **product categorization** and **filtering functionalities** to enhance user navigation and improve **product discovery** on the website.
- **Tech Stack:** HTML, CSS, Javascript, Github.

Publications

➤ **Unibuddy: An AI Based AR Indoor Navigation Solution**

June 2023

International Journal of Creative Research Thoughts | ISSN: 2320-2882

[Link](#)

- Developed a **hybrid tracking system** for efficient **indoor navigation** on mobile devices (smartphones and tablets) in **complex college campuses**, addressing the challenges faced by students in locating crucial offices, stationaries, and entry blocks in unfamiliar settings.
- Implemented **AI, AR, and GPS** technologies to create a precise and **reliable localization system**, providing a mobile assistant that helps freshmen navigate indoor spaces in real-time, considering both the position and orientation of the user.
- Demonstrated the superiority of augmented reality (AR) navigation over traditional 2D maps or paper maps by utilizing AR-based interfaces and user experiences, resulting in more effective and organic navigation experiences for users.
- Explored the limitations of GPS-enabled navigation indoors and highlighted the need for alternative solutions. Proposed the use of **AR technology** as a scalable and accurate indoor navigation system, overcoming the limitations of GPS by providing **real-time guidance** through virtual overlays on mobile devices.
- **Keywords:** AI, AR, Navigation, Indoor Navigation, Localization system, Web-based application.

➤ **StreetSafe: AI-Based Android Application for Pothole Detection**

Apr 2023

International Journal of Creative Research Thoughts | ISSN: 2320-2882

[Link](#)

- Developed an **end-to-end pothole detection** application, StreetSafe, using **deep learning** and

machine learning techniques, with a focus on real-time detection and **accuracy of 97%**.

- Utilized **Convolutional Neural Network (CNN)**, **MobileNet**, and **SSD (Single Shot Multibox Detection)** to extract features and detect potholes in real-time camera inputs from smartphones and car dash cameras.
- Collected and preprocessed a dataset sourced from **Kaggle**, categorized potholes based on occupied pixels, and trained the model to highlight and **alert users** about potholes through a mobile application.
- Addressed the need for a robust system to detect road anomalies and mitigate accidents caused by potholes, with a goal to **improve driver and pedestrian safety** while reducing vehicle damage and maintenance costs.
- **Keywords:** Application Programming Interface, Deep Learning, Convolution Neural Network, TensorFlow, Tflite, Neural Networks, Pothole detection.

➤ **Stock Price Prediction Using Artificial Intelligence & Neural Networks**

Aug 2022

International Journal of Information Technology & Management | ISSN: 2249-4510

[Link](#)

- Developed a **robust and accurate algorithm** using neural networks and artificial intelligence for predicting stock prices with an **accuracy of 85%**.
- Analyzed and processed **large volumes of live data** using comprehensive algorithms to understand the shortcomings of current prediction methods.
- Utilized advanced machine learning concepts such as **Long Short-Term Memory (LSTM)** and **artificial neural networks** for accurate stock price predictions.
- Used Python and libraries such as **NumPy, Pandas_Data-reader, Keras, TensorFlow, and Matplotlib** for data manipulation, model building, and visualization.
- **Keywords:** Machine Learning, Stock Price Prediction, Long Short- Term Memory, Stock Market, Artificial neural Networks, National Stock Exchanges.

➤ **MEETVERSE: A new way of interaction on Online Meeting Platforms**

Feb 2022

International Journal of Information Technology & Management | ISSN: 2249-4510

[Link](#)

- Developed innovative techniques to **enhance the interactivity** of online meeting platforms through **avatar formation, avatar interaction, and hand gesture controls** for volume adjustment.
- Utilized deep learning techniques, including **face recognition, machine learning, and computer vision**, to create personalized avatars for users, resulting in a more engaging and interactive meeting experience.
- **Conducted comprehensive research** on the history and evolution of online meeting platforms, highlighting the significance of avatars in video calls and the **implementation of avatar** features in popular applications like ChatGame and Loomie Live Pro.
- Implemented **human detection** in video, **human-computer interface design, 3D character modeling, 3D character motion control**, and cloud-based meeting platform concepts to improve the overall functionality and user experience of online meeting platforms.

Licenses & Certifications

- **Docker & Kubernetes: A Complete Practical Guide**
Udemy July 2023
[Link](#)
- **Salesforce Developer Catalyst**
Salesforce June 2023
[Link](#)
- **Architecting Smart IoT Devices**
Coursera April 2023
[Link](#)
- **Prepare Data For Exploration**
Google March 2023
[Link](#)
- **Process Data from Dirty to Clean**
Google March 2023
[Link](#)
- **FinTech Engineering Virtual Experience Program**
Goldman Sachs December 2022
[Link](#)
- **Ask Questions to Make Data-Driven Decisions**
Google
[Link](#) September 2022
- **Foundations: Data, Data, Everywhere**
Google
[Link](#) September 2022
- **Complete Python Bootcamp from Zero to Hero**
Udemy June 2022
[Link](#)
- **Data Structures from University of San Diego**
Coursera April 2022
[Link](#)
- **Object Oriented Programming in Java**
Coursera March 2022
[Link](#)
- **Java Programming: Arrays, Lists and Structured Data**
Coursera February 2022
[Link](#)
- **Programming Foundations in Javascript, HTML, and CSS**
Coursera July 2021
[Link](#)

Volunteer / Position of Responsibility

- **Food Distribution for Needy** June 2023
Food For Life Vrindavan (NGO)
 - Actively participated as a volunteer with **Food for Life Vrindavan**, an esteemed NGO dedicated to **providing food** and **aid** to those in need during the recent floods that struck the region.
 - Contributed to the relief efforts by **distributing food and essentials to the needy people** affected by the devastating floods in Vrindavan, **offering support and compassion during their challenging**

times.

- Through selfless volunteering, **collected numerous heartfelt blessings and expressions of gratitude** from the **flood-affected individuals, families, and communities**, fostering a sense of fulfillment in **making a positive impact on their lives**.

➤ **Graphic Designing Head and Health Coach**

May-2021-Feb 2023

Knowledge Catalyst (now known as PracEdge)

- Volunteering with Knowledge Catalyst involved actively **contributing to the organization's online presence** by **creating engaging and creative social media posts**. Through my efforts, I helped **promote the community's activities**, events, and initiatives, **reaching a wider audience and fostering a sense of belonging** within the community.
- As a volunteer, I took on the **responsibility of mentoring fellow members** in various designing challenges. By **sharing my knowledge and expertise**, I **guided others in developing their design skills**, encouraging a collaborative learning environment within the community.
- In addition to my design mentoring role, I also took an active interest in **promoting the well-being of community members**. I **provided guidance, tips, and support to individuals pursuing their fitness goals**, fostering a holistic and inclusive approach to **personal growth and development**.
- Throughout my time volunteering with Knowledge Catalyst, I actively **participated in a diverse range of activities**. From **social media management** and **design mentoring to supporting fitness enthusiasts**, I **demonstrated versatility and a commitment** to contributing to various aspects of the group's mission.

Achievements

- Stood in the **top 15** in Hackoverflow 4.0(**National Level Hackathon**) out of **3000** team 2022
- In **Google CodeJam** secured a Global rank of **3857** and All India Rank **1120** among 50k participants 2022
- College **Runner-up** in **Smart India Hackathon** in the category of Smart Automation 2022
- In **Google HashCode** secured a Global Rank **2673** and All India Rank **1090** amongst **32k** teams 2022

Languages

- ENGLISH : Professional
- HINDI : Native
- SWEDISH : Beginner