Charanjit Singh

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EDUCATION

Clemson University, USA   *Aug'22-Present*
MS Computer Science, 3.85 GPA

- Courses: Statistics (Hypothesis Testing), Artificial Intelligence (Informed/Uninformed Search, Reinforcement Learning), Advanced Machine learning, DBMS (MySQL), Descriptive & Predictive Analytics, Data processing and visualization

Punjab Engineering College, Chandigarh   *Aug'16-May'20*
Bachelor of Technology, Mechanical Engineering

- Published a Research paper in SAE International with Mahindra & Mahindra Ltd in 2021

PROFESSIONAL EXPERIENCE

Prisma Health & Clemson university   **SC, USA**
Graduate Research Assistant – Data Scientist   *Jan'23-Present*
Proposed a sensor embedded workload adaptive AR surgical training system in collaboration with Prisma Health doctors.

- Engineered a real-time data acquisition pipeline in python by using physiological sensor SDKs. Leveraged websockets to ensure lossless data retrieval and asynchronous programming (asyncio) to send concurrent periodic API requests.
- Enhanced data quality by obtaining filtered and smoothened time series, leading to 80% accuracy in cognitive load (high/low) estimation using an RNN-LSTM model.
- Created an augmented reality training tool in Python using OpenCV by implementing Canny edge detection to create a webcam overlay which displays guiding contours during tumor resection procedures upon detecting heightened cognitive load.
- Recognized for significant contributions to the research endeavor and was awarded a 100% scholarship.

Clemson University   **SC, USA**
Graduate Writing Consultant   *Oct'22-Aug'23*
Consulted fellow graduate students on appropriate writing techniques and organized writing workshops.

- Orchestrated the mentorship and guidance of over 150 student writers, fostering an environment conducive to the development of compelling arguments and the proficient articulation of their ideas.

ZS Associates   **Gurugram, India**
Decision Associate Analyst   *Feb'22-Jun'22*
Performed analytics and operation solutions to render sales and marketing consulting for global pharmaceutical clients.

- Catered to requests from different stakeholders (as POC) by running SQL queries on AWS Redshift, processed large data sets, generated insights/recommendations and responsible for creating and delivering high priority weekly reports.
- Devised a 'Where to play' strategy for global pharmaceutical leader by analyzing KPIs of brands across geographies and generated savings opportunity of $200k by targeting an optimal sales channel mix in medical representatives' engagement.
- Streamlined weekly brand-level analysis workflows, saving over 10 man-hours per week, through the creation of interactive Tableau visualizations that enhanced data visibility and decision-making processes.

Honda R&D (India) Pvt. Ltd.   **Gurugram, India**
Engineer, Engineering Research Division   *Sept'20-Jan'22*
Performed vehicle level tests to acquire data and analyze system performance.

- Tackled a Market Quality issue by conducting extensive market research. Acquired vehicle service data from dealers in NCR region to identify gaps between Honda Test standards and actual market conditions and proposed robust testing conditions.
- Designed a holistic two-wheeler benchmarking database in MS excel and automated the appending process post vehicle testing using ETL which reduced the documentation time per test by 2 hours.

Mahindra Research Valley   **Chennai, India**
Research Intern, Vehicle Energy Management   *Jan'19-May'19*

- Formulated a predictive model in MS Excel to estimate frictional power loss in axles and identified the most influential design parameters in power loss without actual testing, which presented a savings opportunity of $1M annually.
- Successfully proposed a 3% reduction in frictional power loss and published the innovative approach in the prestigious journal of SAE International titled 'Frictional Power Loss Distribution of Automotive Axles - Experimental Evaluation and Analysis'.

EXTRA CURRICULARS
Academic Projects

- **Campaign Success and Customer Conversion**: Analyzed 2-year consumer data and designed 3 A/B Tests to determine the most successful campaign type (using 5% significance) and determined the customer conversion rate as 17%

TECHNICAL AND SOFT SKILLS

- **Technical Skills**: Python | C++ | SQL | MATLAB | Tableau | Power BI | Hypothesis Testing | A/B Testing | MS Office Suite | Advanced Excel | AWS: Sagemaker, Glue (ETL) | Apache Spark | Git
- **Machine Learning**: EDA | Regression | Decision Tree | Random Forest | Ensemble Methods | Gradient Boosting | Support Vector Machines | k-Nearest Neighbors | k-Means Clustering
- **Certifications**: Google Analytics Certification | AWS Machine Learning Specialist | SQL | MATLAB