Surinder Singh Chhabra

925-249-8204 | surinder.chhabra0000@gmail.com | www.linkedin.com/in/surinder-singh-chhabra

EDUCATION

San Diego State University   San Diego, California
Master's in Computational Science-Data Science   *Aug 2024 – Present*

Vellore Institute of Technology   Vellore, India
Bachelor of Technology in Computer Science and Engineering   *Sept 2020 – May 2024*

EXPERIENCE

Research Assistant, Department of Sciences   May 2025 – July 2025
San Diego State University   *San Diego, California*
- Reviewed and synthesized research on **diffusion models, transformers, and spatiotemporal learning** to guide experimental design.
- **Replicated and evaluated state-of-the-art baseline models across spatiotemporal forecasting tasks for benchmarking.**
- Adapted multiple architectures to a **newly introduced dataset**, reshaping inputs and pipelines for fair comparison.
- Generated experimental results to support a **faculty-led research publication**, validating model performance and reproducibility.

Data Analyst Intern   June 2023 – August 2023
Navtark Solutions Pvt. Ltd.   *Indore, India*
- Led **customer segmentation analysis** using clustering techniques, helping marketing teams improve campaign targeting and increasing conversion rates by **14%**.
- Implemented data validation procedures and improved profiling that increased data accuracy by 9%.
- Optimized analytical models through **parameter tuning** and developed **Tableau dashboards** used by leadership to monitor customer KPIs.
- Built **automated Tableau dashboards** with calculated fields and filters to track **conversion rate, retention, and engagement metrics**, reducing manual reporting by **~30%**.
- Presented data-driven insights to product manager, supporting initiatives that improved **customer engagement by 18%**.

PROJECTS

Multivariate Traffic Forecasting with BERT-based Spatiotemporal Modeling   Aug 2025- Oct 2025

Python, PyTorch, Time-Series Forecasting, Transformers
- Designed a **BERT-based spatiotemporal traffic forecasting model** with custom token/point shaping.
- Built a **complete training and inference pipeline** for multivariate time-series data.
- Modeled **temporal and cross-variable dependencies** across speed, inflow, and demand signals.
- Engineered **lag features and temporal embeddings** to capture short- and long-term dependencies across variables.
- Achieved a **0.1 MAE improvement** over strong baseline forecasting models.

Stock Market Predictions using Deep learning Models   June 2023 – Aug 2023

Tensorflow, Oracle Database, Pandas, NLP cloud, Git
- Created features from financial data, such as technical indicators and sentiment scores.
- Built dashboard Tableau for visualizing predictions and performance.
- Used hyperparameter tuning methods like Bayesian Optimization for model optimization.
- Improved prediction accuracy by **over 90% relative to baseline**

TECHNICAL SKILLS

Languages: Java, Python, SQL, C/C++, SQL, JavaScript, HTML/CSS, MATLAB, Jax
Frameworks: Oracle, CSV, JSON, Amazon AWS, Tableau
Developer Tools: Git, Docker, Google Cloud Platform, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse
Libraries: pandas, NumPy, Matplotlib

LEADERSHIP

Outreach Head- TAG Gaming Club, VIT Vellore
- Organized Game designing workshops on Unreal Engine, conducted technical workshops and events on Game Development.