# Lovepreet Singh Gill

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## EDUCATION

**University of Waterloo**                                                         **Waterloo, ON**
*Master of Engineering, Electrical and Computer Engineering, GPA: 91.5/100*        Sept 2024 - Aug 2025
- Vector Scholarship in AI Recipient 2024-25. Received award worth **$17,500** for pursuing AI based masters program

**Panjab University**                                                             **Chandigarh, India**
*Bachelor of Engineering, Major in Information Technology, CGPA: 9.11/10*          Aug 2019 - May 2023

## EXPERIENCE

**Fallyx**                                                                        **Remote, Canada**
*Machine Learning Intern*                                                          Dec 2024 - Present
- Collected, cleaned, and prepared structured and unstructured datasets for machine learning model development
- Applied advanced feature engineering techniques to optimize model performance, including feature scaling, normalization, and selection
- Tuned hyperparameters to improve model accuracy and efficiency through iterative experimentation
- Combined multiple models using techniques such as stacking, bagging, and boosting to develop ensemble models, which improved overall prediction accuracy

**uTrade Solutions Private Limited**                                              **Mohali, India**
*Software Test Engineer*                                                           Jan 2023 - Jul 2024
- Led end-to-end manual testing of HFT systems, validating order execution flows with **99.99%** accuracy in trade processing and risk checks
- Owned QA for CRM based lead management dashboard integrating LeadSquare and Salesforce data, ensuring accurate lead tracking across **10,000+** potential clients
- Collaborated with development teams using Jira's agile project management features, facilitating seamless communication and rapid issue resolution
- Performed thorough UAT testing of dashboard features, reducing client-reported issues by **40%**
- Validated backtesting functionality for **20+** trading strategies across historical data spanning 5 years, ensuring accuracy of P&L calculations and strategy performance metrics with **99%** precision

## PROJECTS

**3D Human Pose Estimation Using Single-View Images**                             Sep 2024 - Dec 2024
- Designed a transformer-based pipeline for estimating 3D human poses using single-view RGB images
- Utilized the TotalCapture dataset for training and evaluation (**1.8M** frames, diverse human actions)
- Integrated ViTPose for 2D keypoint extraction and PoseFormer for 3D pose reconstruction
- Achieved a mean per joint position error (MPJPE) of **65.96 mm**, competitive with state-of-the-art models

**Multi Classification of Alzheimer's Disease**                                   Aug 2022 - Dec 2022
- Led a team to develop a multi-classification model for Alzheimer's Disease progression using Python, scikit-learn, and medical imaging techniques
- Designed a feature extraction framework with First Order Statistics and GLCM features, identifying 10+ biomarkers
- Achieved **66.2%** accuracy with Random Forest, improving baseline by **15%,** and optimized SVM and ANN models
- Evaluated models using k-fold cross-validation and metrics like accuracy, F1-score, precision, and recall

**COVID Chest X-Ray Classifier**                                                  Jul 2022 - Aug 2022
- Designed and implemented a 28-layer Convolutional Neural Network (CNN) for multi-class classification of respiratory conditions, achieving **74%** accuracy across 4 distinct pathological classes
- Implemented an efficient data pipeline to process and augment **21,000+** chest X-rays using TensorFlow and OpenCV
- Optimized model architecture through systematic experimentation with hyperparameters, layer configurations, and regularization techniques, reducing overfitting and improving validation accuracy by **12%**

## SKILLS

**Programming Languages and Libraries:** Python, C/C++, SQL, PostgreSQL, MongoDB, Pandas, Open CV, Pytorch, Tensorflow, Numpy, Linux, Hugging Face, MMPose, Scikit-Learn, CMake
**Tools and Technologies:** JMeter, Jira, Power BI, MS Excel, LaTeX, MS Office 365, Git, Postman, VSCode
**Techniques:** Agile Methodologies, Software Development Life Cycle, Project Management, User Acceptance Testing, Data Mining, Feature Extraction, Data Preprocessing and Transformation (ETL), Data Modelling, Machine Learning, Deep Learning, NLP, Computer Vision
**Soft Skills:** Teamwork, Communication, Event Management, Customer Service, Problem Solving and Critical Thinking

## PUBLICATIONS

- Lovepreet Singh Gill, Jasneh Kaur, Neelam Goel. Machine learning and texture features based approach for classifying Alzheimer's disease. In Proceedings of the Procedia Computer Science Journal; Vol. 235, 2024, Pages 2741-2748  [Ref]