SANSHRIT SINGHAI

+1 (404) 903-4966 | singhai.sanshrit@live.com | linkedin.com/in/singhai-sanshrit | github.com/ssinghai6

EDUCATION

Georgia Institute of Technology | (GPA: 3.90/4.0)   Atlanta, GA, US
Master of Science in Computational Science and Engineering (Specialization: Machine Learning)   May 2023
Coursework: CSE Algorithm, Computer Vision, Machine Learning, Data & Visual Analytics

Shiv Nadar University | (GPA: 8.58/10)   Uttar Pradesh, India
Bachelor of Technology in Civil Engineering (Specialization: Computational Mechanics)   June 2020
Academic Distinction and Best Research award (Opportunity for Undergraduate Research) 2018-19
Coursework: Soil Mechanics, Computational Geomechanics, Foundation Engineering, Finite Element Method

EXPERIENCE

ENRU – Logistics and Postal Optimization   Atlanta, GA, US
Data Scientist   June 2023 – Present
- Developed an objective mathematical objective function to maximize the profit and risk score for the operation using Google OR-Tools CPSAT Solver and Gurobi solver
- Created GSQL queries to improve assignment creation and automate testing, enhancing data processes
- Performed A/B experimentation to refine assignment quality, leveraging insights for better user experience
- Employed unsupervised learning models to enhance assignment quality, facilitating improved recommendation

Georgia Institute of Technology   Atlanta, GA, US
Graduate Research Assistant (National Science Foundation Funded)   August 2022 – May 2023
- Proposed a Reinforcement learning model to optimize the excavation efficiency of excavating Robot by 70%
- Bypassed FEM simulation by ANN that aims to predict the stress field reducing response generation by 20 times
- Designed and trained LSTM-RNN models as multivariate time series and fine-tuned to improve results by 30%

Itasca Consulting Group   Minneapolis, MN, US
Machine Learning Software Intern   May 2022 – August 2022
- Designed a powerful deep learning tool using neural networks, achieving an R2 score of 0.91 for predicting velocity field, bearing capacity, and depth of failure, based on mechanical properties of 230K cases
- Deployed web app using Tensorflow.js and Flask, for real-time velocity failure
- Built advanced mesh generation tool for Rhino Griddle based on Computational Geometry

PROJECTS

Machine Learning-based toolbox for prediction of stress and strain fields from discrete data (Link)
- Parameterized 7 input parameters (depth, mechanical properties, positioning) by leveraging Autoencoders, and achieved 92% accuracy in predicting stress response contours using a Neural Network
- Implemented (Random Forest) for predicting the response at a different distance from centre with R2 score of 0.89

Unveiling Patterns and Insights in Chicago's Criminal Activity through Advanced Data Analysis (Link)
- Evaluated valuable insights from 7M+ crime data sets using PySpark on AWS and visualized on Tableau dashboard
- Created a Flask app with an XGBoost model predicting crime rate and occurrence time by zip code, contributing to community safety by providing actionable insights for law enforcement interventions in high-risk areas.

SIFT Feature Matching and Camera Calibration / Recognition with Deep learning and Semantic Segmentation
- Performed Semantic Segmentation and used CNN to perform pixel-level classification of objects in an image, producing a segmentation mask for each object class with almost 92% accuracy in all categories
- Implemented (SIFT) algorithm to detect and match 87% local features and stitch images into Panorama

TECHNICAL SKILLS

Programming Languages: Python, Julia, JavaScript, C++, C, Linux
ML/DL Libraries and Models: Scikit-learn, TensorFlow, Keras, PyTorch, CNN, RNN, GAN, LSTM, OpenCv
Technical Tools: MATLAB, MLops, ETL, Flask, AWS, PySpark, Scala, Docker, Git, LaTeX, SQL, Gurobi, Qt, OR Tools

PUBLICATIONS

- **Singhai S**., Vikash G., "Uncertainties in Vertical Stress Distribution in Spatially Varying Random Elastic Half-Space," International Journal of Geomechanics, ASCE **(https://doi.org/10.1061/(ASCE)GM.1943-5622.0002332)**
- Rachamadugu R., **Singhai S**., Vikash G. (2019), "Effect of Soil Spatial Variability on Lateral Response of Well Foundation Embedded in Linear Elastic Soil".Springer Nature, (**https://doi.org/10.1007/978-981-15-0886-8_35**)

CERTIFICATIONS

Generative AI – Oracle | Machine Learning (ML) by Stanford University | Time Series Udemy| Computer Vision Udemy| NLP Udemy| Reviewer ASCE - International Journal of Geomechanics