

Karan Jeswani

SENIOR QUANTITATIVE ANALYTICS SPECIALIST · WELLS FARGO

Corporate Model Risk

☎ (+91) 8850954398 | ✉ krjjeswani21@gmail.com | 🏠 karanjeswani.com | 💻 codewithkaranjeswani | 🌐 karanjeswani

Work Experience

Wells Fargo

Bangalore, India

MODEL RISK, INTELLIGENT SYSTEMS

July, 2021 - May, 2024

- Automated the validation of 5% of roughly 1000 models that needed to be validated every year in the company
- Set up a standard protocol for Model as a Service with Arrow Flight
- Implemented a framework for validators to write generic tests for model validation
- Created a web interface as well as python library for entire validation workflow using Next.js, FastAPI

Bangalore, India

MODEL RISK, GENERATIVE AI

July, 2023 - May, 2024

- Created LLM Studio, a web store of applications of LLMs in model risk workflows - currently roughly 100 users
- Added Chat with LLM feature using Llama-2-7b as the language model, with pluggable model API to use different models as needed
- Provided a scalable solution using naive multi-gpu round robin method

CG Power and Industrial Solution Limited

Mumbai, India

PRODUCTION ENGINEER, POWER TRANSFORMERS DIVISION

June, 2017 - December, 2017

- Completed a Project to implement IEC 60076 standards as quality baseline in manufacturing and testing of Power Transformers.
- Responsible for supervising the Core-Coil Assembly and Tanking operations for Power Transformers.

Education

Indian Institute of Science (IISc)

Bangalore, India

M. TECH IN COMPUTATIONAL AND DATA SCIENCE (CDS)

July 2019 - June 2021

CGPA : 8.80 / 10

Lab: Medical Imaging Group

Veermata Jijabai Technological Institute (VJTI)

Mumbai, India

B. TECH IN MECHANICAL ENGINEERING (ME)

July 2013 - May 2017

CGPA : 8.40 / 10, Ranked 17th in a class of 70

Lab: Statistical Thermodynamics

Projects

Seat Allocation Model

August, 2021 - October, 2021

- Identified and formulated the seat allocation problem as a nested LPP with constraints of seating capacity and seating arrangement preferences
- Provided the solution using open source simplex solver in python and javascript both. Integrated it into the current javascript pipeline for the web interface
- 50 users from Corporate Properties Group perform seat allocation workflow using this tool

Automatic Evaluation Metrics for Multi-Sentence Text

January, 2020 - June, 2020

- Implemented several common metrics in Natural Language Processing (NLP) like BLEU, ROUGE, BERTScore, Sentence Movers Similarity for evaluating single and multi-sentence text on 3 datasets, namely WMT-18, CNN News, Student Answer Scripts.
- Performed experiments with various embeddings like GloVe, ELMo, BERT, RoBERTa, with all types of metrics.
- In conclusion, Cosine similarity is a better metric for gauging correlation with humans in contrast to word matching or Wasserstein distance for both single and multi-sentence text.

MRI to CT Image Modality Translation using Conditional GAN

January, 2020 - June, 2020

- Implemented cGAN, commonly used for Image-to-Image Translation in Computer Vision (CV), to synthesize CT scan images given MRI-T1 images. Used smaller network that still achieves performance comparable with State-of-the-Art.
- Performed hyper-parameter tuning for both networks using grid search strategy for extracting best performance, in terms of PSNR and SSIM, for custom dataset.
- Observed performance improvement by adding perceptual loss using pre-trained VGG-19 with fixed weights and by incorporating neighboring slices as input.

Skills

Programming Languages

Python | C | C++ | Typescript, Javascript | Basic SQL | Lua

Deep Learning Libraries

Pytorch | Tensorflow | Keras | Pyspark

Open Source Libraries

Numpy | Sci-kit Learn | Pandas | MATLAB | Matplotlib | Plotly | p5.js

Web Development

TRPC | React.js | Next.js | TailwindCSS | ShadCN UI