

FALAK SHAH

falaktheoptimist@gmail.com
(+91) 940-813-0235
LinkedIn

A-163, Ashoknagar Society,
Ahmedabad, Gujarat, India
GitHub

EDUCATION

Dhirubhai Ambani Institute of Information and Communication Technology

M.Tech, ICT (2013-2015)

CPI : 9.96/10

Recipient of President's Gold Medal for Academic Excellence

Nirma University

B.Tech, Electronics and Communication (2009-2013)

CPI : 8.31/10

EXPERIENCE

Head of AI

Apr 2023-Present

- Overseeing / advising on multiple projects involving deep learning, LLMs, computer vision
- Responsible for hiring, upskilling and overall management of ML department (70+ team members)
- Lead the transition of the org from ML/ data science projects to deep learning/ vision and towards LLM/ agentic AI through upskilling and learning programs
- Part of the business development team

Lead Research Scientist/ ML Research Lead, Infocusp

June 2017- Apr 2023

- Worked on/ guided different projects from a variety of domains:
 - Mapping EEG signals to audio signals
 - Tiny object detection from aerial images
 - Predicting molecule properties using deep learning
 - Discovering novel molecules with desired properties using VAE + bayesian optimization (Gaussian processes prior)
 - Optimizing aspects of logistics supply chain
 - Various approaches to solve ARC tasks: Genetic Programming/ Dreamcoder
 - LLM based summarization, question answering system based on RAG, content generation
- **In house research**
 - Mentor for project for pose detection and correspondence matching in sports videos. Posenet and movenet used for pose detection and graph based matching algorithm for scale/ rotation/ position invariances paper
 - Developed a minimal example of diffusion model to understand the overall working github
 - Guiding a project on real time pedestrian tracking using Yolo v3 based detector and Kalman filter paper
 - Developed a library for visual representation of feature learning in convolutional neural networks: tf_cnnvis.
 - Lead the project on DL based music generation using LSTMs from midi files and music transcription for Indian classical musical instruments using TensorFlow's Magenta framework. paper
 - Guided project on understanding the working of LSTMs and attention based networks using simple case studies like text generation and binary addition. github
 - Developed a library for low resource training of models for single cell classification based on gene expression github

Research Scientist, Infocusp

June 2015- May 2017

- Employing Machine learning on financial time series data to discover and trading strategies likely to perform well out of sample
- Designed a portfolio optimizer for CCI which involved translating their financial domain constraints and concepts into a convex optimization problem

Graduate Teaching Assistant, DA-IICT

July, 2013 - May, 2015

- Conducted labs/ tutorial sessions for the B.Tech batch at DA-IICT on Digital Signal Processing, Signals and Systems, Analog and Digital Communication.

Intern, Indian Space Research Organization

Jan, 2013 - May, 2013

- Designed and ran simulations on a highly robust GPS receiver model using Simulink. It made use of Kalman filter for seamless tracking loop operation even under severe ionospheric scintillations.

ACHIEVEMENTS

Awarded Spot bonus twice from the Project managers in client projects

Aicrowd AI blitz IX Community contributor award winner and 4th place on leaderboard globally

Secured 2nd and 5th position respectively in primary and secondary track of PASSNYC: Data Science for good challenge on Kaggle.

2nd position Careervillage Data Science for good challenge on Kaggle.

President's Gold Medal for Academic Excellence, 2015 Masters batch at DA-IICT

Grant of 100 preemptible and 5 dedicated cloud TPUs for 1 month under Tensorflow Research cloud (TFRC) program

Stood first in "Pixel Pundit" - a National level image processing competition organized by IISc Bengaluru and Carl Zeiss

PATENTS

Gadhiya, T., Shah, F., Vyas, N., Gharakhanyan, V., Yang, J. and Holiday, A., X Development LLC, 2023. Depolymerization optimization platform. U.S. Patent Application 17/967,723.

Gadhiya, T., Shah, F., Vyas, N., Yang, J., Gharakhanyan, V. and Holiday, A., X Development LLC, 2023. Molecular structure transformers for property prediction. U.S. Patent Application 17/967,685.

Andre, D., Singh, R., Radkoff, R., Madan, Y.A., Vyas, N., Parmar, J., Shah, F. and Trivedi, S., X Development LLC, 2023. Varying embedding (s) and/or action model (s) utilized in automatic generation of action set responsive to natural language request. U.S. Patent Application 18/142,472.

Holiday A., Gharakhanyan V., Shah F., Vyas N., Gadhiya T., X Development LLC, 2023. Machine learning platform for finding solid catalysts for depolymerization reactions, US Patent Application 18/435,957

Andre, D.; Vyas, N.; Pradhan, S.; Radkoff, R.; Butterfoss, R.; Shah, F.; Parmar, J; X Development LLC, 202. Generating interfacing source code, US Patent 12/217,029

Singh, R., Andre, D., Honke, G.R., Shah, F., Vyas, N., Parmar, J., Rosen, B.M. and Trivedi, S., X Development LLC, 2025. Training and application of bottleneck models and embeddings. U.S. Patent Application 18/224,889.

PUBLICATIONS

S Jogani, A Pol, M Prajapati, A Samal, K Bhatia, J Parmar, U Patel, F Shah, N Vyas, S Gupta, "scaLR: a low-resource deep neural network-based platform for single cell analysis and biomarker discovery", Briefings in Bioinformatics, Volume 26, Issue 3, May 2025

R Javia, F Shah, S Dave, "PoseSync: Robust pose based video synchronization", arXiv preprint arXiv:2308.12600

T Gadhiya, F Shah, N Vyas, V Gharakhanyan, J Yang, A Holiday "Directional Variational Transformers for continuous molecular embedding", Critical assessment of molecular machine learning workshop

P Soni, F Shah, N Vyas "Faster object tracking pipeline for real time tracking", arXiv preprint: 2011.03910

F. Shah, T. Naik and N. Vyas, "LSTM Based Music Generation", iCMLDE (IEEE), Taiwan, 2019

F. Shah, B. Vikani and N. Vyas, "TFcnnvis : Visualizing Convolutional Neural Networks", NVIDIA GTC EU, Munich, 2018

F. Shah, P. Shah and R. Dubey, "Specularity Removal for Robust Road Detection," IEEE International Conference Region 10 (TENCON), Singapore, 2016.

WORKSHOPS/ INVITED TALKS

Invited talk on Applications of GenAI in design, environment and finance at Ahmedabad University

Tutorial on Retrieval Augmented Generation at ICDAR, Athens, Greece

Invited talk on Applications of Langchain, NTU, Singapore

Prototyping LLMs ft Langchain, CIIE, IIM Ahmedabad

NLP Canvas, ICDAR, Laussane, Switzerland

Machine Learning Summer School, AERFAI, Spain

Hands on Deep Learning: Faculty Development Program at SGSITS, Indore

Python for ML and Data Science at NIT, Jaipur

LSTM Playground at MIND Conference, NIT, Kurukshetra

IEEE Machine Learning Summer School at DA-IICT, Gandhinagar

Demystifying optimizers used in deep learning at SciPy India Conference, IIT Mumbai

CERTIFICATIONS/ ONLINE COURSES ACCOMPLISHED

Google Cloud certified Professional Machine Learning Engineer

Google Cloud

Machine Learning, *Coursera*

Stanford University

Statistical Learning Theory, *Lagunita Stanford*

Stanford University

Data Scientist's Toolbox, *Coursera*

John Hopkins University

Digital Signal Processing, *Coursera*

EPFL

Autonomous Navigation for Flying Robots, *edX*

Technical Universitat De Munich

Image And Video Processing, *Coursera*

Duke University

Cryptography-I, *Coursera*

Stanford University

Uncertified: CS231n (Deep learning for computer vision, Stanford University) and Learning from Data (CalTech)