

# Tanmay Vakare

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Work Authorization: F1

Software Engineer - Machine Learning  
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## EDUCATION

### The University of Texas at Dallas, Richardson, Texas

August 2021 - August 2023

*Master of Science in Computer Science (Thesis)*

- Relevant Coursework: Algorithms, NLP, ML, Probabilistic Graphical Models, Statistics

### Gujarat Technological University, India

August 2014 - May 2018

*Bachelor of Engineering in Information Technology, GPA 8.5/10*

- Relevant Coursework: Algorithms and Data Structures, Big Data, Data Mining, Business Intelligence

## SKILLS

Languages	Python, C++, C, R, Java, CUDA
Technologies	PyTorch, TensorFlow, Keras, NLTK, Spacy, OpenCV, Flask, Spring Boot
DBs & Infrastructures	MongoDB, Firebase, MySQL, Redis, Azure, AWS, GCP, Docker
Others	Hadoop, Spark, Kafka

## TECHNICAL EXPERIENCE

### Software Development Engineer Intern

August 2022-December 2022

*Amazon, Alexa Devices*

*Sunnyvale, California*

- Improved user experience by catering personalised media content to the users interacting with Alexa speech services.
- Designed and engineered features to support, user and playlist owner, recognition during media play control interactions.
- Worked on Java web services with 600K+ daily requests and 100+ APIs.

### Data Scientist/ Applied ML Research Engineer

August 2019-July 2021

*Blackstraw.ai*

*Chennai, India*

- Supported clients by improving their AI solutions to grow their businesses.
- Built an abstractive summarizer for news articles by adopting a multi-stage fine tuning approach for BERT encoder and GPT-2 decoder.
- Redesigned Yolo-V3 based real-time video analytics platform using NVIDIA Deepstream, Triton Server and TensorRT, to increase it's throughput of closed-circuit cameras from 10 to 40, and performance from 15FPS to 20FPS for each camera.
- Developed low-latency, asynchronous embedded python server for low cost fully mechanical ventilator, built in collaboration with Stanford University to help developing nations fight covid.
- Optimized GraphNN based tabular information extraction workflow to improve its precision by 5%. Also, refined the algorithm to reduce it's training time by 20%.
- Provided analytical insights from statistical and text(interviews, job requirements, etc) data to increased the hiring rate for staffing agency by 10%.

### Co-Founder, Technology Lead

January 2019-July 2019

*Rehabo Technologies*

*Vadodara, India*

- Devised an algorithm to detect and evaluate physical therapy exercises using V-NECT deep learning model.
- Formulated scoring algorithm to evaluate progress of the user and used Firebase to store patient's data.
- Resulted Home-Based Rehabilitation Device potentially reduced rehabilitation cost by 30%.

## PROJECTS

### Predicting Morals from Fables

*Thesis Project, The University of Texas at Dallas*

- Understanding narrative texts and then predicting the morals from situated reasoning, norms, intents, actions and their consequences. Currently, working on analysing results from experiments with various combinations cross-attention, autoencoding/autoregressive LLMs and building story intention graph for experimenting with GraphCNN and LLMs.

### ReLIE: Representation Learning for Information Extraction

*Independent*

- A transformer based entity recognition algorithm from form-like documents. Trained a base transformer model to recognize predefined entities in document images and then extract the corresponding values. [Source Code](#)

## PUBLICATIONS

- Tanmay Vakare, Kshitij Verma, Vedant Jain "Sentence Semantic Similarity Using Dependency Parsing", Proceedings of 10th International Conference of Computing, Communication and Networking Technologies (2019): DOI: [10.1109/ICCCNT45670.2019.8944671](https://doi.org/10.1109/ICCCNT45670.2019.8944671)