LAKHAN TANAJI KADAM

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Education

- University of Waterloo — Waterloo, Canada
  MEng ECE, Artificial Intelligence & Machine Learning — Sept 2022 – Dec 2023

- Lovely Professional University — Punjab, India
  Bachelor of Technology, Computer Science (GPA: 9.1/10.0) — Aug 2014 – June 2018

Work Experience

- Quickplay — Toronto, Canada
  Machine Learning Intern | Python, Forecasting, PyTorch, TensorFlow — Jan 2023 – May 2023
  - Formulizing Quality of Experience (QoE) accurately using different attributes.
  - Exploratory Data Analysis of streaming data to create Forecasting model (QoE).
  - Designing forecasting pipeline for predicting QoE for the next 30 minutes.

- Vector Institute — Toronto, Canada
  Machine Learning Associate | Python, Forecasting, PyTorch, TensorFlow — Dec 2022 – Jan 2023
  - Developed project charter for Forecasting Quality of Experience (QoE).
  - Analysed various methodologies and techniques to Calculate and Forecast QoE.

- Xperi Corporation — Bengaluru, India
  Software Development Engineer | Python, Java, C, Clojure, Cython, Shell — Nov 2019 – August 2022
  - Developing core algorithms for Advanced Search and Recommendation.
  - Implementing new features for the Conversation product.
  - Developing and integrating data publish pipelines for multiple customers.
  - Data generation and data merge optimization.

- TiVo Corporation — Bengaluru, India
  Software Development Engineer | Python, Haxe, C++, JavaScript, Shell — July 2018 – Oct 2019
  - Developed core functionality for TiVo STBs.
  - TiVo App development for Android Tv, Apple Tv and Web.
  - Developed HDR, VOD, SOCU and SCTE-27 subtitle feature for TiVo STBs.
  - Extraction and analysis of STB and TiVo app logs.

- TiVo Corporation — Bengaluru, India
  Software Development Engineer Intern | Python, Haxe, C++, JavaScript, Shell — Jan 2018 - Jun 2018
  - HDMI-CEC feature development for TiVo STBs.
  - Optimized translations delivery for multiple languages.

- ◦ Optimized feature and regression testing for TiVo STBs.
- ◦ Developed tool to monitor service minds availability.

· TiVo Corporation   Bengaluru, India
  Software Development Engineer Intern | Swift, Objective-C, Python, C, JavaScript   Jul 2017 - Dec 2018
- ◦ Developed application features for TiVo iOS app.
- ◦ Optimized regression and smoke testing for TiVo mobile app.
- ◦ Fixed and dev tested bugs for TiVo mobile app.
- ◦ Optimized memory management for TiVo mobile app.

· VenturePact LLC   Punjab, India
  Software Development Engineer Intern | MongoDB, Express.js, Angular, Node.js   Jun 2017 - Jul 2018
- ◦ Developed placement portal for students.
- ◦ Optimized website performance and regression testing for placement portal.

Technical Skills

- Languages: Python, Java, C++, C, Haxe
- Libraries: TensorFlow, Keras, PyTorch, AutoGluon, NLTK, Scikit-learn, VaderSentiment
- Databases: MySQL, PostgreSQL, Redis, MongoDB, GraphQL
- Stack: NLP, Forecasting, Generative AI, Computer Vision, AWS, Google Cloud
- Tools: GPT, Docker, DVC, Github, Jira, Jenkins, Confluence, CI/CD

Patents & Publications

- Systems and Methods for Improving Content Recommendations Using a Trained Model US11551086B2
  - ◦ Problem Statement: Current recommendation systems do not recommend interesting clips for a content.
  - ◦ Solution: Suggest points of interest using LSTM Recurring Neural Networks.

- Systems and Methods for Improving Comprehension in Translation Based on Context-based References
  US20220100970A1
  - ◦ Problem Statement: Current translation systems do not consider local regional factors for context references.
  - ◦ Solution: Replace entity by comparing qualities of the previous entity by giving weightage to the factors.

- Systems and Methods for Converting an Input Content Item Based on Contexts US20220171939A1
  - ◦ Problem Statement: A word can have several meanings based on region and can mean differently in a region.
  - ◦ Solution: Consider regional factors and replace it with another global word using knowledge graph.

Projects

- Semantic Segmentation of Field Anomalies [GitHub]**|** Python, Deeplab, ResNet, PyTorch
    - Detecting 9 different field anomalies from field dataset using semantic segmentation.

- Finding exoplanets using Microlensing [GitHub]**|** Python, Keras, Tensorflow, CNN
    - Detecting exoplanets in each image set using principles of Microlensing and CNN.

- Sentiment Analysis & Feedback**|** Python, TensorFlow, Scikit-learn, Sklearn, Vader
    - Recommending content and ranking search based on user sentiment in multiple languages

- Child Detection using Voice**|** Python, Keras, TensorFlow, Scikit-learn, SVM
    - Detecting child using voice in multiple languages to restrict search and recommendation

- Containerization of production and staging setups **|** Python, Docker, AWS EC2, Supervisor
    - Containerized the production and staging environments for local development & testing

- Improving data production and publish pipeline **|** Python, AWS EC2, Nginx
    - Improved data production and data publish pipeline by writing efficient algorithms

- Named Entity Recognition [GitHub] **|** Python, Keras, TensorFlow, Numpy, Sklearn, Pandas
    - Named Entity Recognition for dataset using Neural Networks

- Text Emotion Detection [GitHub] **|** Python, Sklearn, SVC, LSVC, RFC, DTC
    - Detecting emotion in text using different classifiers

- Email Spam Detection [GitHub] **|** Python, Sklearn, Numpy, NLTK
    - Filtering spam emails using multinomial NB

- Product Recommendation System [GitHub] **|** Python, Pandas, Numpy
    - Recommending products based on history and preferences

- Seller Management App [GitHub] **|** JavaScript, Angular, MongoDB, Node.js, TypeScript
    - Managing shopkeeper purchase and sell of products
    - Recommending product to shopkeepers for buying based on demand

- Perforce Shelve Patcher [GitHub] **|** Python
    - Script to shelve and un-shelve perforce history to and from zip

- TiVo Coins **|** Python, Haxe, C++, JavaScript
    - Providing coins as reward for customers watching premium VOD content.
    - Redeem coins to unlock other premium VOD content.

Presentations

- FastLane Program Pitch: Proof of Concept (Forecasting) (November 2022)
- Tech Talk: Quantum Computing at TiVo (September 2019)
- Intern Showcase: TiVo Stream and STB (June 2018)

- Intern Showcase: TiVo iOS app (Jan 2018)

Awards & Honours

- Nominated for Vector AI Scholarship (2022)
- 4000 USD by Xperi under innovation awards (2020-2021)
- High-5 Award at Xperi for exemplary performance (2020 - 2022)
- Runner up at TiVo Hackathon (2019)
- Gold medallist at International Olympiad of Mathematics (2013)

Certifications

- iOS 11 & Swift 4 – The Complete iOS App Development Course [Certificate]
- Artificial Intelligence A-Z: Learn How to Build an AI [Certificate]
- Machine Learning A-Z: Hands-On Python & R in Data Science [Certificate]
- The Complete React Native + Hooks Course [Certificate]

Organizations

- Armour of Care (AoC) Member   Sept 2018 – Aug 2022
  - Helping defence veterans for recruitment in civil jobs
  - Serving fellow citizens in case of natural calamities
  - Providing quality education to deprived children