

LAKHAN TANAJI KADAM

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Education

- **University of Waterloo** Waterloo, Canada
MEng ECE, Artificial Intelligence & Machine Learning Sept 2022 – Present
- **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

- AI & ML tools: ChatGPT, Dall-E 2, LLMs, Google AutoML, Google Vertex AI
- Programming languages: Python, Java, C/C++, Haxe, Closure, JavaScript, Shell
- Libraries: TensorFlow, PyTorch, Scikit-Learn, NLTK, Keras, Numpy, Pandas, Wapiti, Gensim, SpaCy
- Databases: MySQL, PostgreSQL, Redis, MongoDB, GraphQL
- Stack: Forecasting, NLP, CRF, AWS Cloud, Docker, DVC, Supervisor, Jenkins, ELK, Zabbix, Apache
- Frameworks: Django, Flask, Angular, jQuery
- Developer Tools: Google Colab, GitHub, Jira, Confluence, VS Code

Patents & Publications

- **Systems and Methods for Improving Content Recommendations Using a Trained Model**
 (US11551086B2) [[Link](#)][[Draft](#)]
 - 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**
 (US 17/036,696) [[Link](#)][[Draft](#)]
 - 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**
 (US 17/108,180) [[Link](#)][[Draft](#)]

- 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

- Cover Letter Generator | Python, OpenLlama
 - Generating cover letter by providing job description and resume
- Summarizing Research Papers | Python, LangChain, StreamLit
 - Summarizing research papers by providing research paper links
- Child Detection using Voice | Python, Keras, TensorFlow, Scikit-learn, SVM
 - Detecting child using voice in multiple languages to restrict search and recommendation
- Sentiment Analysis & Feedback | Python, TensorFlow, Scikit-learn, Sklearn, Vader
 - Recommending content and ranking search based on user sentiment in multiple languages
- 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 | Python, Keras, TensorFlow, Numpy, Sklearn, Pandas
 - Named Entity Recognition for dataset using Neural Networks
- Text Emotion Detection | Python, Sklearn, SVC, LSVC, RFC, DTC
 - Detecting emotion in text using different classifiers
- Email Spam Detection | Python, Sklearn, Numpy, NLTK
 - Filtering spam emails using multinomial NB
- Product Recommendation System | Python, Pandas, Numpy
 - Recommending products based on history and preferences
- Seller Management App | 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 | 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 (Computer Vision) (March 2023)
- 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)

Certifications

- Deep Learning A-Z: Neural Networks, AI & ChatGPT Bonus [[Certificate](#)]
- Artificial Intelligence A-Z: Learn How to Build an AI [[Certificate](#)]
- Machine Learning A-Z: Hands-On Python & R in Data Science [[Certificate](#)]
- iOS 11 & Swift 4 – The Complete iOS App Development Course [[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