1131 Prestige Ferns Residency
Harlur Road, HSR Layout
Bangalore - 560102

Varun Tulsian

(+91) 9611185547
LinkedIn
varuntulsian2001@gmail.com
My Blog, wity'AI

Summary:

Highly skilled and experienced Machine Learning Leader with a proven track record of delivering business impact, I have a strong background in developing and implementing AI and ML solutions for both large corporations and startups.

- Led teams of ML engineers working on NLP, deep learning, to solve complex ML problems at a huge scale.
- My contributions resulted in a $20M increase in sales and improved outcomes for Walmart Marketplace sellers.
- My published research has received 147 citations, and I have consistently excelled in the roles assigned to me.

PUBLICATIONS:

1. Multi-Objective Learning: Label aggregation approaches for Learning to Rank in E-commerce.
2. MUX: Algorithm Selection for Software Model Checkers (Published in **MSR, Hyderabad**) **31 citations.**
3. MintHint: Automated synthesis of Repair Hints (Published in **ICSE** - **A* conference**) **116 citations.**

Work Experience:

Professional development, Break   Oct 2022-Present

I have taken a career break to focus on my interests in deep learning and generative AI, and have been actively pursuing personal projects and continuing my education in these areas. My recent work can be found here.

Walmart Labs, Bangalore   Apr 2020-Sept 2022

Senior Manager I, Data Science, Workstream Lead, Walmart Search Marketplace

Led ML Teams, building AI driven insights using NLP, deep learning, & Spark to create insights for **100K Sellers & 60M products**.

- Content Recommender, used by **7K Sellers on 400K products** to improve product discoverability. Utilizing sentence transformers, Pos-Tagging & Statistical techniques to identify high impact keywords for products.
- Assortment Recommendations, helping Walmart procure products that drove **$20M** sales, using semantic search embedding algorithms, Approximate Nearest Neighbour, & Solr to find Assortment Gap queries.
- Drove Business growth by improving search conversions by **61 basis points,** by developing relevance and ranking algorithms using Multi-objective Learning and Click based features for ranking.

Other Work: Semantic Search Ranking using Bi Encoder deep NN (using attention based techniques), Graph based embedding, Spam Identification, Attribute impact insights, Semi-Supervised Learning, Taxonomy Matching using transformer based model to encode product title, Stakeholder Management, Leadership, and Mentoring.

Sensara Technologies (AI Startup)   June 2019-Apr 2020

Staff Data Scientist, Lead Content Personalization

Creator of the Content Personalization Platform that powered the "+You Page" and all recommendation modules on the Sensara Apps and delivered recommendations to partner companies like Xiaomi and Airtel.

- Created User embedding, and content embedding using watch times and Knowledge Graph. Learning algorithm that incorporates user recent events for real time recommendations. Worked with Transformers and cross-encoders.
- Personalization platform from **real-time** log events **(1 million events/hour at the peak)** for **300K+ users** (Airtel and MI TV users) watching content on TV streamed and parsed using distributed processing system Flink and cached using SSDb.

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Walmart Labs, Bangalore

Aug 2013-May 2019

Staff Data Scientist, Walmart Search

Lead and key contributor, delivered products in Walmart Grocery, Sam's Club and Walmart.com Search ranking teams.

- **Grocery: CNN** models for intent understanding, and attribute understanding to improve product relevance in search.
- **Sam's: Hierarchical Bayesian models** for reorder based personalization on Search ranking for members and offline algorithm performance benchmarking. Drove search business conversions by over **1%.**
- Models to optimize conversion using **Click-Stream** based to improve Search ranking. **Product Orders/user lift +1.9%.**

Other Work: XGBoost Ranking for Grocery business, Related Searches using Markovian Graphical models, Spell correct and Typeahead system for search, Merch modules ranking and platform for Walmart.com.

Microsoft Research, Bangalore

Jan 2013-March 2013

Intern

Worked with leading researchers in the Software verification area on algorithm Selection for spec checkers used by Windows.

ACHIEVEMENTS:

Indian Institute of Science, Bangalore   **Aug 2011-Jul 2013**

- **AIR 8** among 136K, 100 percentile in **GATE 2011 Computer Science Exam.**
- Masters in Engineering (ME) in Computer Science with CGPA of **6.8/8**. Top 10 percentile at IISc.

Walmart Labs, Bangalore

- Twice **Role Model** rating on performance in 2017 & 2018. Top 5-7 percentile based on performance in Walmart.
- **Conference Presentation** -- Solution to Reorder-Based Personalization for Sam's Club at Walmart.