Ashwani Bhat

Applied Scientist 2 · Amazon

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Experience

Amazon Applied Scientist 2 | Bengaluru, IN *Oct 2024 - Present*

- Developed a policy-aware, retrieve-then-label framework for content annotation, including a multi-agent iterative label refinement system that maintains high precision and recall under evolving policies. Even with policy updates occurring 2–3 times per month, the system's robust retrieval and refinement steps ensure labels remain compliant without requiring frequent model retraining.
- Built and deployed a vLLM-based Qwen2-VL classification endpoint with multi-LoRA support, consolidating multiple endpoints into one and reducing serving cost by **70%**, and further exponential savings for new endpoints.
- Built an LLM-as-a-Judge evaluation framework for **QA, RAG, and classification** workloads, including a multi-LLM judging strategy and a UI for trace visualization. It included a LLM council based decisioning system which increases the overall precision of labeling by **10%**.
- Designed and implemented a cascaded inference architecture for our legacy models to improve to reduce cost and reduce end-to-end latency for ad policy classification.
- Developed a synthetic data generation pipeline using Qwen-Image to mitigate scarce and imbalanced label distributions and improve downstream model quality.
- Implemented multiple labeling adapters to classify and label ads against policy requirements across different language marketplaces.

Amazon Applied Scientist 1 | Bengaluru, IN *July 2022 - Sep 2024*

- Developed and deployed text classification models for Content Moderation in data-scarce locales (Spain, Japan) using **weak supervision**, reducing defective ad volume and sustaining rejection precision; leveraged **XLM-Roberta** and **BERT** with custom architectural improvements.
- Built multimodal labeling models for **Content Labeling** across US/UK/CA marketplaces, increasing automation; implemented the **FLAVA** multimodal model.
- Designed an automated hard-sample mining algorithm for Amazon ASIN categorization, improving precision, reducing scientist manual effort by **70%-80%**, and cutting model development TAT by **5%-10%**.
- Led **Operational Excellence** initiatives: managed support engineering, maintained pipelines, resolved tickets, and served as a **Bar Raiser** for multiple model launches.

MathWorks Application Support Engineer | Bengaluru, IN *Aug 2021 - June 2022*

- Built a POC in *adiabatic quantum computing* to train linear regression on synthetic data in a simulated environment and executed experiments on the D-Wave 2000Q QPU.
- Implemented interpretability methods (**Occlusion, LIME, GradCAM**) within MATLAB's Quantization Module.
- Added adversarial attack support (**FGSM, BIM**) to MATLAB's Quantization Module and evaluated robustness of quantized models under attack.
- Partnered cross-functionally and engaged directly with customers to troubleshoot MATLAB product issues and ensure high satisfaction.

Publications

- Abhinav Joshi, **Ashwani Bhat**, Ashutosh Modi,*"Sign of Languages: Corpus for sign language for Indian languages"*. Accepted at ***EMNLP 2022*** main conference, Seattle. **Paper**
- **Ashwani Bhat**, Ashutosh Modi,*"Multi-Task Learning Framework for Extracting Emotion Cause Span and Entailment in Conversations"*. Accepted at ***Workshop on Transfer Learning for Natural Language Processing, NeurIPS 2022***. **Paper** | **Code**
- Abhinav Joshi, **Ashwani Bhat**, Atin Vikram Singh, Ayush Jain, Ashutosh Modi,*"COGMEN: COntextualized GNN based Multimodal Emotion recognitioN"*. Accepted at ***NAACL 2022*** main conference, Seattle. **Paper** | **Code**
- Vijit Malik, **Ashwani Bhat**, Ashutosh Modi,*"Adv-OLM: Generating Textual Adversaries via OLM"*. Accepted at ***EACL 2021*** main conference, Santa Clara, CA. **Paper** | **Code**

Education

2021	**M.TECH** (Computer Science & Engineering)	Indian Institute of Technology, Kanpur	**8.6/10.0**
2018	**B.TECH** (Computer Science & Engineering)	National Institute of Technology, Srinagar	**9.17/10.0**

Skills

Languages Python, C/C++, MATLAB **Frameworks** Scikit-Learn, pyTorch, TensorFlow, OpenCV, Keras
Databases MySQL **Utilities** AWS, Bash, Git, Vim, LaTeX **OS** Ubuntu, Windows

Achievements

2018 **Department Rank 1**, in B.Tech, Computer Science and Engineering **(NIT Srinagar) 2018** *India*

2018 **Secured a Rank of 323 (out of 107,893)**, in Graduate Aptitude Test in Engineering **(GATE) 2018** *India*