## **Abhay Kumar**

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## **About Me:**

A seasoned **Full Stack Machine Learning Professional** with **over 10 years of experience** in designing, **implementing, deploying, optimizing, and enhancing** large-scale **ML models and algorithms** in production environments. Specializes in leveraging data science methodologies to address complex business challenges, with a proven track record in **NLP and Computer Vision domains**. Known for translating complex technical issues into actionable insights and **delivering clear, impactful data stories to diverse audiences**.

## **Professional Experience:**

### **Sr Engineer - Target Corporation (Feb 2021 – Present)**

#### *Anomaly Detection System for Image Pipeline*

* Developed a system that filtered 92% of anomalies in image data pipelines, enhancing efficiency by 21%.
* Employed model experimentation and version tracking for iterative improvements.
* Kept track of multiple experiments and maintained model versions for ease of delivery of the best model.
* Deployed as a service with continuous monitoring, enabling easy updates, scalability and modular maintenance

#### *Privacy Blur Feature*

* Fine-tuned a face detection system for diverse camera environments, achieving 88% accuracy and reducing detection latency by 60% through lightweight tracking integration optimizing for low-latency inference.
* Kept track of multiple experiments and maintained model versions..
* Deployed as a service with continuous monitoring, enabling easy updates, scalability and modular maintenance.

#### *Visual Embedding for Retail*

* Custom-trained a similarity-based model, improving embedding performance by 11% over standard models for retail environments.
* Deployed as a service with continuous monitoring, ensuring robustness in a dynamic retail environment.

### **Senior Data Scientist - Embibe (May 2019 – Jan 2021)**

#### *Multimodal(text and images) Question Tagging*

* Implemented a system using text and image data to categorize questions with over 90% accuracy.
* Conducted extensive model experimentation for exploring various multimodal fusion techniques.
* Deployed as a service with continuous monitoring and feedback loop

#### *Review moderation system*

* Designed an algorithm to identify NSFW comments with 95% efficiency, customizing text embeddings for the academic domain.
* Deployed as a service with continuous monitoring and iterative model refinement post-deployment

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#### **Senior Data Scientist - ClipIndia (Sep 2018 – Apr 2019)**

#### *NSFW video content filtering*

* Created a video content moderation system, flagging NSFW content with 95% efficiency and reducing moderation costs by 80%.
* Model deployed as a service ensuring continuous delivery, easy updates, and ease of scalability

#### *Video tagging*

* Automated genre classification of videos , achieving 85% efficiency and enhancing annotation processes by 90%.
* System deployed as a service, ensuring continuous delivery and ease of scalability

### **Senior Data Scientist - Cogknit Semantics (Sep 2015 – Sep 2018)**

#### *E-catalog sanitisation*

* Developed a model to identify incorrect product listings, improving e-catalog quality by approximately 20%.
* Utilized continuous model monitoring and optimization for consistent performance.

### **Sr. Research Analyst - Edureka (Dec 2013 – Sep 2015)**

* Achieved "Best Performer" status for five consecutive months, significantly contributing to student engagement and success.
* Authored high-traffic blog posts on advanced ML and Big Data topics, enhancing community knowledge and engagement.

## **Education:**

* Bachelor in Computer Science, Visvesvaraya Technological University (VTU), 2013.

## **Skills:**

* Computer Vision: Object Detection, Image Classification, Text Detection, Text recognition, Segmentation
* Frameworks: Deep Learning (PyTorch, TensorFlow), Scikit-learn, Numpy, Pandas
* Data Processing: Python, NumPy, Pandas, Spark, Hadoop.
* Software Engineering: Python, Git, Docker, CI/CD, APIs

## **Publications and Presentations:**

* Poster presentation on "Domain Adaptation of Image Caption Model for Video Descriptions" at AI & Deep Learning Conference (GTC 2018, NVIDIA).