San Jose, CA
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Shankar Venkitachalam

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Work Experience

Staff Machine Learning Engineer **Adobe** **2019 - present**

Adobe GenStudio

- Lead the development of Adobe GenStudio from ideation to launch, utilizing generative AI models for scalable, on-brand, personalized marketing content creation.
- Pre-trained, fine-tuned and aligned LLMs on marketing content from brands to improve brand-adherence.
- Optimized models for accuracy, creativity, lexical diversity, personalization and domain knowledge.
- Developed models and pipelines for validation of content adherence to brand style and guidelines.
- Collaborated with cross-functional teams to set the technical direction for AI initiatives by defining ML objectives and success criteria, driving the roadmap, making key ML decisions, and evaluating tradeoffs.
- Contributed to multiple patents on crucial ML models and solutions, driving innovation and intellectual property creation.
- Advocated for new ML technologies, methodologies and best practices, set quality standards and contributed to the upskilling of the team.
- Assisted in recruitment and onboarding of new ML hires, and provided mentorship, technical guidance and code reviews to the team.

Adobe Firefly Content Tagging Services

- Created models for content understanding and tagging of text and images, offered as services via APIs, as well as integrated into Adobe products such as Adobe Experience Manager.
- Developed NLP models for Keyphrase extraction, Named Entity recognition and text classification, and CV models for image classification and color extraction. (4 patents filed)

Adobe Experience Cloud AI

- Devised a novel conditioning strategy for generation of images conditioned on given semantic attributes using unconditional GANs. Published a paper in the AICC workshop at CVPR 2021.
- Engineered model and pipeline for semi-supervised identification and summarization of marketing segments and critical event detection in online web sessions. Filed two patents and published a workshop paper at WebConf (WWW) 2020.

Machine Learning Intern **Adobe** **Summer 2018**

- Developed anomaly detection and cause analysis models for Creative Cloud marketing and customer journey data, leading to a patent.

Senior Machine Learning Engineer **Snapdeal** **2015 – 2017**

Multimedia Research Group

- Built solutions for automatic validation and standardization of new product listings. Trained text classifiers for category prediction, and deep learning models for background extraction and harmful content detection.
- Implemented pipelines for feature extraction, clustering and nearest neighbor computation of catalog images, to be used for image-based search and product similarity.

Senior Software Engineer **Adobe** **2013 – 2015**

- Played a key role in building Adobe Learning Manager from the ground up.
- Designed and built the backend system and APIs for processing and storage of course content.
- Integrated third party services for transcoding videos and converting documents to HTML.

Software Engineer, R&D **Tejas Networks** **2012 – 2013**

- Implemented features in the software layer for enterprise ethernet and optical networking switches and routers.

Skills

- ML and GenAI frameworks: PyTorch, TensorFlow, HuggingFace, Axolotl
- Areas of Expertise: Machine Learning, Natural Language Processing, Computer Vision

Education

University of Massachusetts Amherst **2017 – 2019**

- M.S. in Computer Science.
- Courses: Machine Learning, NLP, Reinforcement Learning, Information Retrieval, Algorithms.

National Institute of Technology Calicut, India **2008 – 2012**

- B.Tech. in Computer Science & Engineering.

Publications

- **Directional GAN: A novel conditioning strategy for generative networks**
  Shradha Agrawal, Shankar Venkitachalam, Dhanya Raghu, Deepak Pai
  AICC Workshop, **CVPR 2021**
- **CrEOS: Identifying critical events in online sessions**
  Meghanath Macha, Shankar Venkitachalam, Deepak Pai
  Temporal Web Analytics Workshop, **WebConf (WWW) 2020**

Selected Patents

- **Generating weighted contextual themes to guide unsupervised keyphrase relevance models**
  Debraj Debashish Basu, Shankar Venkitachalam, Vinh Khuc, Deepak Pai
- **Quantifying and improving the performance of computation-based classifiers**
  Debraj Debashish Basu, Ganesh Satish Mallya, Shankar Venkitachalam, Deepak Pai (filed)
- **Machine learning models applied to interaction data for facilitating modifications to online environments**
  MY Meghanath, Shankar Venkitachalam, Deepak Pai
- **Generative model-assisted content generation and interactive content editing**
  Varsha Sankar, Shankar Venkitachalam, Meghanath Macha Yadagiri, Deepak Pai, Debraj Debashish Basu (Filed)
- **Using Shapley values to evaluate prompt generation parameters**
  Meghanath Macha Yadagiri, Debraj Debashish Basu, Shankar Venkitachalam, Anish Narang, Deepak Pai (Filed)
- **Generating digital content consistent with context-specific guidelines utilizing prompt augmentation and model tuning**
  Deepak Pai, Meghanath Macha Yadagiri, Shankar Venkitachalam, Debraj Debashish Basu, Varsha Sankar, Maryam Moosaei (Filed)
- **Generating Image Metadata Using A Compact Color Space**
  Nimish Srivastav, Shankar Venkitachalam, Satya Deep Maheshwari, Mihir Naware, Deepak Pai (Filed)