

Priya Sharma

AI Research Scientist | Multimodal LLM Specialist

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Professional Summary

Innovative AI Research Scientist with 10+ years of experience in developing cutting-edge multimodal and language models. Specialized in cross-modal learning, multimodal representations, and efficient training methodologies. Published researcher with proven track record of translating theoretical advances into practical applications.

Professional Experience

Principal AI Researcher

FusionAI Research, New York, NY (Feb 2019 - Present)

- Led research team developing a 100B-parameter multimodal model integrating vision, language, and audio capabilities.
- Pioneered novel cross-attention architectures improving vision-language alignment by 40%.
- Developed efficient pre-training strategies reducing compute requirements by 30% while maintaining performance.
- Published 7 research papers in top-tier conferences (NeurIPS, ICLR, CVPR) and obtained 3 patents.

Senior Research Scientist

ModalityLabs, Boston, MA (Nov 2015 - Jan 2019)

- Designed neural architectures for joint processing of text and image data.
- Created novel pre-training objectives for improved cross-modal transfer learning.
- Developed benchmark datasets for evaluating multimodal understanding capabilities.
- Led collaboration with product teams to integrate multimodal capabilities into commercial applications.

Research Scientist

Universal AI Institute, San Francisco, CA (Jul 2012 - Oct 2015)

- Conducted foundational research on representation learning for language and vision.
- Developed early multimodal transformer architectures.
- Created evaluation frameworks for assessing model capabilities across modalities.

Technical Skills

- **Research Areas:** Multimodal Learning, Vision-Language Models, Representation Learning
 - **Model Architectures:** CLIP, DALL-E, Flamingo, GPT-4V, LLaVA, Stable Diffusion
 - **Programming Languages:** Python, Julia, R
 - **ML Frameworks:** PyTorch, JAX, TensorFlow
 - **Experimentation:** Weights & Biases, MLflow, Sacred
 - **HPC & Distributed Computing:** Slurm, DeepSpeed, FSDP
 - **Data Processing:** NumPy, Pandas, OpenCV, FFMPEG
 - **Statistical Analysis:** Bayesian Methods, Causal Inference
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Education

PhD, Computer Science (AI Focus)

Carnegie Mellon University, Pittsburgh, PA (Graduated: May 2012)

- Dissertation: “Joint Representation Learning for Vision and Language” - NSF Graduate Research Fellowship recipient

Master of Science, Computer Science

Indian Institute of Technology (IIT), Delhi, India (Graduated: Jun 2008)

- Thesis: “Statistical Models for Natural Language Processing” - Gold Medalist, Top of class

Bachelor of Technology, Computer Science and Engineering

Indian Institute of Technology (IIT), Bombay, India (Graduated: May 2006)

- Awarded President’s Gold Medal for academic excellence

Research Publications

- Sharma, P., et al. (2023). “Efficient Pre-training Strategies for Multimodal Large Language Models.” *NeurIPS*.
 - Sharma, P., et al. (2022). “Cross-Modal Attention Mechanisms for Vision-Language Models.” *ICLR*.
 - Sharma, P., et al. (2021). “Scaling Laws for Multimodal Models.” *CVPR*.
 - Sharma, P., et al. (2020). “Representational Alignment in Vision-Language Models.” *EMNLP*.
 - Sharma, P., et al. (2018). “Joint Embeddings for Cross-Modal Retrieval.” *ECCV*.
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Patents

- US Patent 11,574,832: “Method for Efficient Cross-Modal Learning in Neural Networks”
 - US Patent 11,231,749: “Systems and Methods for Multimodal Representation Learning”
 - US Patent 10,984,562: “Architecture for Vision-Language Understanding”
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Professional Service

- Program Committee: NeurIPS, ICLR, CVPR, ACL (2018-present)
 - Associate Editor: Transactions on Machine Learning Research (2021-present)
 - Workshop Organizer: “Multimodal Foundation Models,” NeurIPS 2022
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Languages: English (fluent), Hindi (native), French (intermediate)