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Ashutosh Chaubey
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Overview

Areas of Interest. Multimodal LLMs, Multimodal Emotion and Social AI, Speech and Audio, Video Generation, Vision-Language Models

Summary. My research at USC aims to develop *multimodal social understanding* and *behaviour generation* algorithms using *multimodal large language models* and large *diffusion models* respectively. Prior to USC, I have three years of industry experience on *speech understanding* and *multimodal content retrieval*.

Education

2024 - 2029 **PhD in Computer Science**, *University of Southern California, Los Angeles*.
GPA 4.0/4.0, Advisor - Prof. Mohammad Soleymani

2017 - 2021 **BS in Computer Science**, *Indian Institute of Technology, Roorkee*.
GPA 9.718/10.0 - **Third-highest GPA** amongst all the graduating students of IIT Roorkee 2021

Publications

2025 **AVERE : Improving Audiovisual Emotion Reasoning using Preference Optimization**.
Ashutosh Chaubey, Jiacheng Pang, Maksim Siniukov, Mohammad Soleymani
under review at the International Conference on Learning Representations (ICLR) 2026

2025 **Face-LLaVA : Facial Expression and Attribute Understanding through Instruction Tuning**.
Ashutosh Chaubey, Xulang Guan, Mohammad Soleymani
Winter Conference on Applications of Computer Vision (WACV) 2026 - Round 1 (6.4% accept.) [Preprint] [Webpage]

2025 **Can VLMs Recall Factual Associations From Visual References ?**.
Dhananjay Ashok, **Ashutosh Chaubey**, Hirona Arai, Jonathan May, Jesse Thomason
Conference on Empirical Methods in Natural Language Processing (EMNLP) 2025 [Preprint]

2025 **DiTaiListener : Controllable High Fidelity Listener Video Generation with Diffusion**.
Maksim Siniukov, Di Chang, Minh Tran, Hongkun Gong, **Ashutosh Chaubey**, Mohammad Soleymani
International Conference on Computer Vision (ICCV) 2025 [Preprint] [Webpage]

2024 **ContextIQ : A Multimodal Expert-Based Video Retrieval System for Contextual Advertising**.
Ashutosh Chaubey, Anoubhav Agarwaal, Sartaki Roy, Aayush Agrawal, Susmita Ghose
Winter Conference on Applications of Computer Vision (WACV) 2025 [Paper] [Poster]

2023 **Meta-Learning Framework for End-to-End Imposter Identification in Unseen Speaker Recognition**.
Ashutosh Chaubey, Sparsh Sinha, Susmita Ghose
IEEE Workshop on Automatic Speech and Understanding (ASRU) 2023 [Paper] [Poster]

2022 **Improved Relation Networks for End-to-End Speaker Verification and Identification**.
Ashutosh Chaubey, Sparsh Sinha, Susmita Ghose
Interspeech 2022 [Paper][Poster]

2022 **OPAD : An Optimized Policy-based Active Learning Framework for Document Content Analysis**.
Sumit Shekhar, Bhanu Prakash Reddy Guda, **Ashutosh Chaubey**, Ishan Jindal, Avneet Jain
CVPR 2022 Workshop on Fair, Data Efficient and Trusted Computer Vision [Paper] [Patent]

2020 **Universal Adversarial Perturbations : A Survey**.
Ashutosh Chaubey*, Nikhil Agrawal*, Kavya Barnwal, Keerat K. Guliani, Pramod Mehta
arXiv Preprint (**50+ citations**) [Paper]

2019 **A GAN-based Ensemble Technique for Automatic Evaluation of Machine Synthesized Speech**.
Ashutosh Chaubey*, Jaynil Jaiswal*, Bhimavarapu Sasi Kiran Reddy, Shashank Kashyap, Puneet Kumar, Raman Balasubramanian, Partha Pratim Roy
Asian Conference on Pattern Recognition (ACPR) 2019 [Paper] [Poster]

Research Experience

Aug 2024 - Present **Graduate Researcher**, Institute for Creative Technologies, University of Southern California.
Advisor - Prof. Mohammad Soleymani

- Working on post-training approaches such as preference optimization (eg., DPO) for multimodal LLMs.
- Worked on Face-LLaVA, a general VLM for different face analysis and face reasoning tasks, outperforming all open source SOTA VLMs on nine face analysis benchmarks. [Paper (WACV 2026 - Round 1)]
- Worked on diffusion-based photorealistic listener behaviour animation using audio-visual speaker signals - improvements of upto 73% on photorealism and 6% on motion generation. [Paper (ICCV 2025)]

Apr 2023 - Jul 2024 **Founding Research Engineer**, Anoki Inc..
Advisor - Dr. Susmita Ghose
— Worked with multimodal models for video retrieval using text, image, and audio. [Paper (WACV 2025)]
— Proposed system achieves near 100% performance and outperforms heavier baselines on audio and video retrieval baselines. [Patent-1] [Patent-2] [Patent-3]

Jul 2021 - Mar 2023 **Data Scientist**, LG Ad Solutions (formerly Alphonso Inc.).
Advisor - Dr. Susmita Ghose
— Worked with state-of-the-art speaker verification models such as RawNet and ECAPA-TDNN to exhibit their generalizability on near-/far-field audios, different languages, and under noisy environments.
— Proposed a novel relation network-based pipeline for end-to-end speaker recognition, improving the baseline by up to 12% relatively. [Paper (Interspeech 2022)] [Paper (ASRU 2023)]

May 2020 - Jul 2020 **Research Intern**, Big-data Experience Lab, Adobe Research.
Advisor - Dr. Sumit Shekhar
— Used deep Q-learning to learn an optimal acquisition function for active learning by modeling the active learning cycle as a Markov Decision Process. [Paper (CVPR 2022 Workshops)]
— Reduced the annotation effort by using a weak learning setting where the annotator just has to verify the current model predictions on acquired samples. [US Patent App. 17/170,307]

Jan 2019 - Mar 2020 **Research Intern**, Indian Institute of Science (IISc.), Bengaluru | Indian Institute of Technology, Roorkee.
Advisors - Prof. R Venkatesh Babu | Prof. R. Balasubramanian
— Worked on multi-person human pose prediction using synthetic dual person dataset to mitigate data limitations.
— Worked on automatic evaluation of TTS and proposed a GAN-decoder-based scoring mechanism. [Paper (ACPR 2019)]
— Experimented with state-of-the-art universal adversarial perturbation techniques (attacks and defenses) and wrote a survey paper with over 50 citations. [Survey Paper]

Academic Services

Conference Reviewer: CVPR 2025, ICCV 2025, WACV 2026

Teaching Assistant: CS561 (Foundations of AI) – Fall 2025

Supervised Students

Jiacheng Pang – Research Internship, Grad Student at USC, Summer 2025 - Present
Xulang Guan – CURVE Fellowship, Undergraduate at USC, Fall 2024 - Present
Belle Hsieh – Research Internship, Undergraduate at UPenn, Summer 2025
Hongkun Gong – CURVE Fellowship, Undergraduate at USC (Now, Grad Student at Columbia), Fall 2024

Skills

Coding Languages - Python [Advanced], C++ [Intermediate]
Frameworks/Libraries - PyTorch, NumPy, Pandas, Transformers
Tools - VSCode, Git, Anaconda, Docker