✉ achaubey@usc.edu
www.ashutoshchaubey.in
Ashutosh Chaubey
ashutosh-chaubey

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Education

2024 - 2029 **PhD in Computer Science**, *University of Southern California, Los Angeles*.
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

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

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 diffusion models for pose and expression conditioned video generation.
- Working on multimodal emotion and facial expression analysis by using VLLMs.

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. [Under review (WACV 2025)]
- Worked with state-of-the-art text-to-speech and voice cloning technologies to generate AI voice-overs for TV ads.
- Mentored an intern on emotion recognition in movie scenes using audio and multi-modal approaches.

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)]
- Worked on neural audio fingerprinting for automatic content recognition on TV devices using contrastive learning.

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]

Skills

Coding Languages - Python [Advanced], C++ [Intermediate]

Frameworks/Libraries - PyTorch, NumPy, Pandas, Transformers

Tools - VSCode, Git, Anaconda, Docker