

SAVYA KHOSLA

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EDUCATION

University of Illinois Urbana-Champaign

MS in Computer Science (CGPA: 4.0 / 4.0)

Urbana, IL

Aug 2022 - May 2024

- Graduate Teaching Assistant for CS 225: Data Structures and CS 445: Computational Photography

Delhi Technological University

B.Tech. in Computer Engineering (CGPA: 9.40 / 10.0)

New Delhi, DL

Aug 2017 - July 2021

- Received Research Excellence Award and INR 50,000 for noteworthy contributions to machine learning research

RESEARCH EXPERIENCE

Allen Institute of AI

Research Intern

Seattle, WA

Oct 2022 - Present

- Working towards improved multimodal video representation learning by efficiently handling videos of up to 10 minutes
- Contributed to a unified model for handling images, text, audio, videos, thereby performing 50+ tasks spanning across CV, NLP, GenAI

National University of Singapore

Research Assistant (Guide: Prof. Kenji Kawaguchi)

Remote

Apr 2022 - Aug 2022

- Developed robust active learning algorithm for handling heteroskedastic noise, resulting in 10% accuracy improvement over baselines
- Demonstrated 15% accuracy improvement in other state-of-the-art algorithms by incorporating a simple self-supervised approach

Mila - Quebec AI Institute

Research Intern (Guide: Prof. Yoshua Bengio)

Montreal, QC

Apr 2021 - Nov 2021

- Demonstrated catastrophic failure of uncertainty-based active learning algorithms by proposing 3 heteroskedastic data distributions
- Proposed adversarial training technique that achieves 48% reduction in error rate on clean data while preserving adversarial robustness

INDUSTRY EXPERIENCE

Google

Software Engineer

Bangalore, KA

Aug 2021 - Mar 2022

- Improved Google Search's web ranking infrastructure using deep learning for better multimodal document understanding
- Enhanced precision and recall in salient entity extraction from webpages by transitioning from traditional ML methods to LLMs

Software Engineering Intern

May 2020 - Jul 2020

- Initiated the development of MuRIL, a BERT-based multilingual language model for 17 Indian dialects
- Achieved 10.42% F1 improvement in sentiment analysis and 9.87% in named entity recognition for Indian languages

Cadence Design Systems

Python Developer Intern

Noida, UP

Dec 2018 - Jan 2019

- Streamlined complex multi-step process of fetching file revisions from 2 version control systems to a single bash command

SELECTED PUBLICATIONS

- Savya Khosla**, Chew Kin Whye, Jordan T. Ash, Cyril Zhang, Kenji Kawaguchi, and Alex Lamb. Neural active learning on heteroskedastic distributions, *26th European Conference on Artificial Intelligence (ECAI)*, 2023.
- Alex Lamb, Vikas Verma, Kenji Kawaguchi, Alexander Matyasko, **Savya Khosla**, Juho Kannala, and Yoshua Bengio. Interpolated adversarial training: Achieving robust neural networks without sacrificing too much accuracy. *Neural Networks*, 154:218–233, 2022.
- Anil Singh Parihar, Shashank Kumar, and **Savya Khosla**. S-DCNN: stacked deep convolutional neural networks for malware classification. *Multimedia Tools and Applications*, 81:30997–31015, 2022.
- Savya Khosla**, Alex Lamb, Jordan Ash, Cyril Zhang, and Kenji Kawaguchi. Catastrophic failures of neural active learning on heteroskedastic distributions. In *NeurIPS 2021 Workshop on Distribution Shifts: Connecting Methods and Applications*, 2021.
- Simran Khanuja, Diksha Bansal, Sarvesh Mehtani, **Savya Khosla**, Atreyee Dey, Balaji Gopalan, Dilip Kumar Margam, Pooja Aggarwal, Rajiv Teja Nagipogu, Shachi Dave, Shruti Gupta, Subhash Chandra Bose Gali, Vish Subramanian, and Partha Talukdar. MuRIL: Multilingual Representations for Indian Languages. *arXiv*, 2021.

PROJECTS & SKILLS

Selected projects: [Occluded Facial Expression Recognition](#), [Image Captioning](#), [Text-to-Image](#), [Machine Learning Algorithms](#), [AgroAI](#)

Programming languages/frameworks: Python, C++, TensorFlow, Keras, PyTorch, JAX, Flax, Git, Bash Scripting, Javascript, OpenCV

Technical skills: Data Structures, Algorithms, Machine Learning, Computer Vision, NLP, Multimodal Learning, Data Handling, GCP