

Apoorv Agnihotri

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Education

Eberhard Karls University of Tübingen

Oct 2023 - Sep 2025

Master's in Machine Learning (Grade: 2.04)

Tübingen, Germany

- **Relevant Coursework:** Massively Parallel Computing, Math for ML, Convex Optimization, Data Literacy

Indian Institute Of Technology (IIT), Gandhinagar

Jul 2016 - Jul 2020

Bachelor of Technology in Computer Science and Engineering (GPA: 8.25 / 10.00)

Gandhinagar, India

- **Relevant Coursework:** Machine Learning, Data Science, NLP, 3D Computer Vision, Computer Org. & Arch.

Experience

Mercedes-Benz

Aug 2024 – Present

AI Research - Working Student · part-time

Böblingen, Germany

- Focusing on Neuromorphic computing.

Artpark, Indian Institute of Science

Jul 2023 – Oct 2023

Machine Learning Engineer Consultant · part-time

Bangalore, India

- Built a prototype using RAGs (retrieval augmented generation) on LLMs to improve knowledge dissemination to Auxiliary Nursing Midwifery to help in quicker help with pregnancy care on the field.

Rephrase AI (acquired by Adobe)

Apr 2022 – Jun 2023

Deep Learning Researcher

Bangalore, India

- Used Variational Auto-encoders (VAEs) and Generative Adversarial Networks (GANs) to work on generative speech, creating a proof of concept for voice cloning with few seconds of target speaker's voice samples.
- Used off-the-self speech content encoders (hubert-soft) to flag problematic speech on production systems. Further, my explorations in speech encoders helped us improve our lip-sync model.
- Improved team's experimental throughput by integrating ML experimenting frameworks like pytorch-lightning.

Wadhvani AI (non-profit funded by the Gates Foundation)

Jun 2020 – Mar 2022

Associate ML Scientist I

Mumbai, India

- Led the development of a research prototype for scanning and interpreting medical docs using template matching and classical computer vision.
- For our mobile solution, implemented and deployed SOTA Deep Learning techniques for object detection.
- Experimented with sample rejection of adversarial inputs in the wild. (**NeurIPS 2022 workshop, ICLR 2023**)
- Coauthored a white paper detailing potential venues for AI disruption in Indian agriculture.
- Represented Wadhvani AI at Google's *AI for Agriculture Hackathon* and won a cash reward of 1 million rupees.

IIT Gandhinagar

May 2019 – Jul 2019

Summer Research Intern

Gandhinagar, India

- Authored an expository article on Bayesian Optimization. (**Distill 2020**)
- Created Polire and Vayu for aiding research in computational sustainability. (**Poster at SenSys 2020**).
- Used active learning for optimal sensor placement recommendation to reduce costs. (**CoDS COMAD 2020, ICML Workshop 2020**).

NVIDIA

May 2018 – Aug 2018

Accelerated HPC & Machine Learning Intern

Bangalore, India

- Implemented GPU-optimized Kalman filters in rapids.ai, a data science framework utilizing NVIDIA GPUs.
- Created a library to generate multivariate Gaussian random numbers on GPU using a standard normal sampler.

Selected Projects

Temporal Epipolar Regions @ 3D Computer Vision (CV) Course – [link](#) | *Epipolar Geometry, Computer Vision, Python*

- Implemented the algorithm described in the paper Temporal Epipolar Regions.
- The algorithm used the concept of epipolar geometry to locate an object moving in a straight line. The object is captured from various angles at different timesteps.

Reinforcement Learning (RL) in Games @ ML Course – [link](#) | *Spring Boot, Express.js, TensorFlow, PyTorch, jQuery, Bootstrap*

- Developed a data visualization dashboard using D3.js, providing stakeholders with real-time insights and improving decision-making processes.
- Built a CI/CD pipeline using Jenkins and Docker, reducing deployment time by 40% and ensuring consistent and reliable releases.

Publications

- Agnihotri, A., & Batra, N. *Exploring Bayesian Optimization*. **Distill**, 5(5), e26. (2020)
- Narayanan, S. D., Patel, Z. B., Agnihotri, A., & Batra, N. *A toolkit for spatial interpolation and sensor placement*. In Proceedings of the 18th Conference on Embedded Networked Sensor Systems. **Poster at SenSys** (pp. 653-654). (2020)
- Narayanan, S. D., Agnihotri, A., & Batra, N. *Active learning for air quality station location recommendation*. In Proceedings of the 7th **ACM IKDD CoDS and 25th COMAD** (pp. 326-327). (2020)
- Narayanan, S. D., Agnihotri, A., & Batra, N. *Active learning for air quality station deployment*. Real World Experiment Design and Active Learning **Workshop at ICML** (2020)
- White, J., Madaan, P., Shenoy, N., Agnihotri, A., Sharma, M., & Doshi, J. *A Case for Rejection in Low Resource ML Deployment*. Challenges in deploying and monitoring machine learning systems. **Workshop at NuerIPS** (2022)
- White, J., Agarwal, C., Ohja, A., Agnihotri, A., Sharma, M. & Doshi, J. *BOLLWM: A real-world dataset for bollworm pest monitoring from cotton fields in India*. **ICLR**. (2023)

Teaching

- Guest lecture on Diffusion Models in Probabilistic ML course (2022) @ IITGN.
- Conducted research seminars at Wadhwani AI and Rephrase AI.
- TA for TEQIP, Machine Learning (2019) @ IITGN. Course for up skilling local college professors to use Machine learning in their fields.
- Gave a PyData [Talk](#) (2018) on rapids.ai at PyData, Gandhinagar.

Technical Skills

Languages: Python, C++, Javascript, Julia, JAX, HTML, Matlab, SQL

Technologies: TensorFlow, PyTorch, Hydra, CUDA, Node.js, Electron, Express.js

Concepts: Artificial Intelligence, Machine Learning, Neural Networks, Deployment, Efficient Machine Learning on Edge, GPU programming, Operating Systems, Networks