Anirudh Prabakaran

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Education

MS in Computer Science | Georgia Institute of Technology | GPA: 4.0/4.0 **Aug 2021 — May 2023**

- **Specialization:** Machine Learning
- **Courses:** Graduate Algorithms, Computer Vision, Machine Learning, Natural Language, Deep Learning, Artificial Intelligence, Intro to Health Informatics, Data and Visual Analytics
- **Graduate Teaching Assistant:**
  - CS 7641: Machine Learning (Fall 2022, Spring 2023)
  - CS 4400: Introduction to Database Systems (Fall 2021, Spring 2022)

B.Tech in Computer Science | National Institute of Technology - Tiruchirappalli | GPA: 8.18/10.00 **Jul 2014 — May 2018**

- **Courses:** Data Structures and Algorithms, Operating Systems, Database Management Systems, Computer Networks.

Work Experience

Meta **May 2022 — July 2022**
Software Engineer Intern | Music Ranking Menlo Park, CA

- Worked on end-to-end ML pipelines to make recommendations better (led to an increase in story/reel production with music) and faster (reduced update frequency from 24hrs to 3hrs) on the Music Browser used across Facebook.
- My work involved multiple iterations of building trending and popular music generators, writing data pipelines, building and training large-scale SparseNN models, performing offline evaluations/visualizations and finally A/B testing to users globally.

Iron Mountain **Sep 2020 — Jun 2021**
Machine Learning Engineer | Insight Bangalore, India

- Designed and engineered a human-in-loop, event-driven pipeline on GCP to process documents using in-house models. By not relying on Cloud AI APIs, we saved significant costs to the company. This system now holds a utility patent.
- Involved in research and implementation of solutions in Document Understanding (splitting, classification, entity validation/extraction). Actively participated in weekly meetings to present latest papers and demonstrate prototypes.

Samsung Research Institute Bangalore **Jun 2018 — Aug 2020**
Senior Software Engineer | IoT Products and Platforms Bangalore, India

- Spearheaded a research proposal to identify anomalous segments from surveillance videos. Used C3D to extract spatiotemporal features from video segments and fed them into a CNN to assign regression scores. Presented this publication in a conference. [link]
- Developed an SDK for IoT devices enabling p2p communication using WebRTC with a team of 8 members. By avoiding servers during streaming, this SDK helped to significantly lower latency, reduce server costs and avoid privacy issues.
- Received a spot award for developing an emergency home audio monitoring engine, targeting common household sounds. This solution was successfully ported in our galaxy home assistant and demonstrated during a workshop at HQ, Korea. [link]
- Contributed to research, commercialization and debugging of Home Monitoring solutions integrated with SmartThings.
- Awarded the Samsung professional certification for strong algorithmic competency, given to engineers globally.

Recent Projects [link]

Exploratory Video Analytics [project link] **2022**

- EVA is a visual data management system that supports a declarative language. It enables querying of visual data in user facing applications by providing a simple SQL-like interface for a wide range of commonly used computer vision models.
- EVA uses PySpark/Ray for execution, PyTorch for inference, Petastorm for storage and SQLite as the underlying DB.

Emoji Category and Position Prediction in Text [report link] **2022**

- Curated a new dataset by scraping and cleaning emoji information along with character and word level index for about 350K tweets.
- Implemented a Bi-LSTM network with pre-trained GloVe embeddings for predicting the type and position of an emoji given a text. Achieved 62% accuracy in emoji prediction (modeled as a top-10 classification problem) and a 78% accuracy in position prediction.

Vehicle Make and Model Prediction [report link] **2022**

- Implementation of Vision Transformers and Bilinear CNNs for a fine-grained image classification of vehicle make/model prediction.
- We used VMMRdb as the dataset and showed that B-CNNs outperforms VT and other baseline methods for all dataset configurations.

Technical Skills

Languages and Tools: Python, C++, SQL, JavaScript, D3, PyTorch, PySpark, Docker, Git, GCP, Linux

Volunteer and Extra-Curricular

- **Teaching Volunteer, Make a Difference:** Taught classes weekly for school kids belonging to various shelters in Bangalore. [link]
- **Member, Coding Club:** Responsible for development of various internal admin projects, college portals and tech support for events.
- **Sports Contingent:** Represented college in the Chess team. Managed the CS department for the intra-college sports fest.