# Aditeya Baral

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## EDUCATION

**New York University, Courant Institute of Mathematical Sciences** — New York, NY
*Masters in Computer Science; GPA - 3.78/4.00*  *Sep 2024 – Present (Expected May 2026)*
**Concentration**: Artificial Intelligence
**Relevant Courses**: NLP/Representation Learning, NLP/Computational Semantics, NLP/Emerging Topics

**PES University** — Bengaluru, India
*Bachelor of Technology in Computer Science & Engineering; GPA - 8.71/10.00*  *Aug 2018 – May 2022*
**Specialization**: Machine Intelligence & Data Science
**Relevant Courses**: Discrete Math, Linear Algebra, Intro to Data Science, Data Analytics, Big Data, ML, NLP

## EXPERIENCE

**Cisco Systems** — Bengaluru, India
*Big Data Analytics Engineer, Webex Media Quality Analytics*  *July 2022 – July 2024*
- Developed and deployed streaming jobs in **Scala** and **Flink** to process **1M+ reports/min** and compute **1200+ real-time metrics** from Calls and Meetings.
- Applied *statistical modelling* techniques to investigate and report *media quality insights* to downstream consumers, *reducing errors by 30% and analysis time by 15 hrs/week* per team member.
- Led the development of *real-time (<1 min) auditing pipelines* using **Kafka** and **Python** to ensure *per-minute data consistency* between streaming jobs and **Iceberg** and **Pinot** data stores, *reducing manual effort by >80%*.
- Built graphs and dashboards on the **Webex Media Quality Analytics Dashboard** using **Grafana** and **Kibana** to set up alerts and KPIs for **20,000+** clients and customers.

*Big Data Analytics Engineering Intern, Webex VideoMesh Analytics and APIs*  *Jan 2022 – June 2022*
- Migrated the **Meetings Analytics Engine** from Java and Spark to **Scala** and **Flink** to scale up to **1M+ reports/min** and significantly *improve real-time report generation* by over **40%**.
- Built **VideoMesh Developer APIs** using **Java** and globally rolled them out for **30,000+ enterprises** with *customer-facing applications*.

**Intel Corporation** — Bengaluru, India
*Applied Research Scientist Intern; Advisors: Anbumani Subramanian, Anay Majee*  *Aug 2021 – Dec 2021*
- Explored **Few-Shot Learning Object Detection** (FSOD) techniques to reduce *catastrophic forgetting* in constrained and heterogenous driving environments.
- Investigated and designed novel *representation learning* and *attention mechanisms* to learn *inter/intra-object relationships* using **PyTorch**.
- Outperformed existing approaches at the time on base and novel classes by **0.2 mAP and 3 mAP** on the *Few-Shot India Driving Dataset*, a benchmark for FSOD.

## SKILLS

**Languages**: Python, Scala, Java, C, R, Groovy, Octave, SQL, LaTeX
**ML/Stats**: PyTorch, Tensorflow, HuggingFace, NLTK, pandas, NumPy, scikit-learn, seaborn, matplotlib, plotly
**Artificial Intelligence Techniques**: Representation Learning, Transfer Learning, Few-Shot Learning, Language Models, Natural Language Understanding
**Big Data/Cloud**: Hadoop, Kafka, Zookeeper, Spark, Flink, Iceberg, Pinot, ELK
**Frameworks/Tools**: Git, GitHub, Jenkins, Docker, Kubernetes, Flask, Grafana, PSQL, MongoDB, AWS, Linux

## PROJECTS AND PUBLICATIONS

[1] **ChatBERT - Multi-task approach to Pre-Training for Structured Conversations**  Webex AI 2023
*Authors: Aditeya Baral, Work done as part of Cisco Webex AI Research*

[2] **CalBERT - Code-mixed Adaptive Language Representations using BERT**  AAAI-MAKE 2022
*Authors: Aditeya Baral, Aronya Baksy, Ansh Sarkar, Deeksha D, Ashwini M Joshi*

[3] **Information Maximization to Overcome Catastrophic Forgetting in FSOD**  Intel VSG Research 2021
*Authors: Aditeya Baral, Anay Majee, Anbumani Subramanian: Work done as part of Intel Research*

[4] **MAPLE - MAsking words to generate blackout Poetry using Seq2Seq LEarning**  ACL-ICNLSP 2021
*Authors: Aditeya Baral, Himanshu Jain, Deeksha D, Mamatha H R*

[5] **Analysis of Kepler Objects of Interest using ML for Exoplanet Identification**  IEEE CONIT 2021
*Authors: Ameya Rajendra Bhamare, Aditeya Baral, Saarthak Agarwal*