Debapriya Tula

ECE at UCLA | Venture Fellow | ex Google DeepMind

+1(310)597-5170
tula.deb011@gmail.com
debapriya-tula.github.io

github.com/Debapriya-Tula
debapriya-tula
Google Scholar

EDUCATION

University of California, Los Angeles   Sep 2024 – Mar 2026
*MS in Electrical and Computer Engineering; **GPA: 4.0/4.0***   *Los Angeles, CA, US*
Relevant Coursework: Advanced Neural Networks, Large Scale ML, Computational Imaging.

Indian Institute of Information Technology, Sri City   2017 – 2021
*Bachelor of Technology in Computer Science; **GPA: 9.35/10.0** (Dept Rank: **5**)*   *Sri City, India*
Relevant Coursework: Machine Learning, Artificial Intelligence, Advanced Statistical Methods

EXPERIENCE

UCLA BAIR Lab   Jan 2026 – Present
Graduate Student Researcher (**Advisor**: Dr. Corey Arnold)   *Los Angeles, CA, US*
- Multiresolution featurization of histological slides of prostate tissues.

Articul8   June 2025 – Sept 2025
Applied Research Intern (**Advisor**: Dr. Felipe Viana)   *Dublin, CA, US*
- Categorized key failure modes of existing Text2SQL models by charting difficulty dimensions across datasets.
- Developed a Text2SQL model that directly addressed these limitations, now in production within ModelMesh.

Google DeepMind   Aug 2022 – Aug 2024
AI Resident (**Advisors**: Dr. Prateek Jain & Dr. Sujoy Paul)   *Bangalore, India*
- Test-time adaptation of OCR models
  - Pioneered test-time adaptation of state of the art OCR models for a **single image** of a user's handwriting.
  - Developed a novel confidence and consistency-based self-training approach leading to over **7** % gains in prediction accuracy for benchmark datasets.
  - Implemented the method for **250+** internal datasets and improved prediction accuracy by more than **15** % for Arabic.
- Streamlined encoding of text for vision-language models
  - Developed a novel method to embed an image's textual content directly into the image, eliminating the need for a separate text encoder in VLMs and improving exact match scores on benchmark VQA datasets by over **2x**.
  - Designed a suite of four extensive pretraining datasets using the PaLM 2 model.
- Efficiency in video and image generation
  - Created a parallel decoding schedule utilising different model granularities, with KV caching and intermittent refresh.
  - Achieved **3x** reduction in number of FLOPS for transformer based image/video generation models.
  - Paper on the same accepted to **ICML 2025** and **ICLR 2025** DeLTA workshop.

TCS Research   Aug 2021 – July 2022
Machine Learning Engineer   *Hyderabad, India*
- Reduced prediction error by **20–30%** by deploying an AutoML-driven framework for healthcare data.
- Mentored **senior developers** on Python, Django, and Machine Learning fundamentals.

IIT Delhi   May 2020 – July 2020
Computer Vision Research Intern (**Advisor**: Dr. Brejesh Lall)   *Delhi, India*
- Designed an efficient temporal encoder for unsupervised motion segmentation of fish in underwater scenarios, **previously unexplored** using deep learning.

SELECT PUBLICATIONS

Masked Generative Nested Transformers with Decode Time Scaling.
***ICML** 2025 & **ICLR** DeLTa workshop 2025 — Co-first author*   [Link]

Target Aware Network Architecture Search and Compression for Efficient Knowledge Transfer.
Multimedia Systems, 2024 (Journal) — Second author   [Link]

Is it an i or an l: Test-time Adaptation of Text Line Recognition Models.
Arxiv pre-print — First author   [Link]

Offense Detection in Dravidian Languages using CMI based Focal Loss and Cosine Normalization.
Springer Nature Computer Science, 2022 (Journal) — First author   [Link]

Ensemble of Multilingual LMs with Pseudo Labeling for Offense Detection in Dravidian Languages.
*DravidianLangTech @ **EACL**, 2021 — First author*   [Link]

Estimating RNA Secondary Structure by Maximizing Stacking Regions.
***ICCCIoT**, 2021 — Second author*   🏆**Best Paper Award** [Link]

TECHNICAL SKILLS

Languages: Python, MATLAB, Javascript, SQL, NoSQL
Expertise: Deep Learning, Machine Learning, Computer Vision, Multimodality, Efficiency
Tools and Frameworks: Tensorflow, Keras, JAX, Pytorch, Scikit-learn, Pandas, Numpy, Rasa