Gowreesh Mago

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LinkedIn

Education

- **Indian Institute of Technology (Indian School of Mines)** — Dhanbad, India
  Integrated Master of Technology - Mathematics and Computing; ***GPA****: 8.87* — *July 2018 - May 2023*

Experience

- **Amazon Prime Video** — Bengaluru, India
  Software Engineer — *July 2023-March 2024*
  - Part of the Playback Optimization team at Prime Video, dedicated to optimizing customer experience using anomaly detection over a diverse set of QoE metrics.
  - Designed and implemented cross-team features to drive widespread adoption of our product, especially during Thursday Night Football '23.
  - Leading research efforts in unsupervised time series anomaly detection within Seasonal Pattern Time Series and reducing IMR costs by refining algorithms for enhanced efficiency.

- **RCV Workshop, ICCV 2023**
  Main Organizing Committee
  - Key member of ICCV 2023's organizing committee, overseeing dataset creation, submission evaluation for the workshop, ensuring the seamless execution of the event.

- **Transmute AI Labs**
  Master Thesis — *September 2022 - April 2023*
  - Worked under the mentorship of **Dr. Deepak Gupta** and **Dr. Dilip K. Prasad** on the development of deep learning algorithms to process large-scale (Gigapixel) images.
  - Advanced histopathological dataset experimentation (TCGA, PANDA), achieving a **9%** accuracy boost for 4096×4096 images while optimizing memory use versus baseline models (ResNet-50, MobileNetV2).
  - Accepted in **TMLR**.

- **Amazon Science** — Bengaluru, India
  Applied Scientist Intern — *May - July, 2022*
  - Researched unsupervised time series anomaly detection methods, spanning statistical approaches to deep learning, focusing on seasonal pattern time series and QoE metrics.
  - **Improved precision** from **54%** in the current approach to **83%**.

- **Newzera**
  Software Engineering Intern — *May - June, 2021*
  - **Landing Website**: Executed dynamic animations for diverse website components and pages, translating Adobe XD wireframes into responsive designs using core **React** and CSS. (Link to website)
  - **Unit testing**: Wrote unit tests for the client-side app using **Jest**, **Enzyme**, **Apollo** with $> 95\%$ test coverage.

- **Worker Union Support (WUSAp)**
  Machine Learning and App Development — *September-December, 2020*
  - Enabled augmented reality wall area estimation, crafting a measurement toolbox feature on an Android app using **Google AR Core** to gauge surface areas and calculate paint requirements.
  - Engineered end-to-end ML pipeline using **ResNet-50** to classify engine parts, leveraging web scraping for dataset creation, model training, and deployment on GCP.
  - App deployed on Google PlayStore. The functionality is included in the toolbox feature.

- **Theoretical and Experimental Epistemology Laboratory (TEEL), University of Waterloo, Canada**
  Research Internship
  - Developed Retinal Vessel Tortuosity metrics using image processing—analyzing curvature and contour smoothing—demonstrating strong correlations with vision conditions such as myopia.
  - The work has been selected for publishing in **Ophthalmic Technologies SPIE 2021** conference.

Publications and Projects

- **Pushing the Limits of Gradient Descent for Efficient Learning on Large Images @ TMLR**:
- **RCV2023 Challenges: Benchmarking Model Training and Inference for Resource-Constrained Deep Learning**: RCV@ICCV 2023
- **A New Method for Quantification of Retinal Blood Vessel Characteristics.**: SPIE 2021
- **Is there a relationship between retinal blood vessel characteristics and ametropia?**: SPIE 2021