Chandan Sreedhara

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WORK EXPERIENCE

Respiro B V — **April 2025 – Present**
Data Science Lead — *Leiden, Netherlands*

- Conducted comprehensive data analysis on gas mixture spectra to optimize device performance, using PCA and PLS-DA for feature wavelength selection and hardware drift characterization, achieving ppb-level limit of detection for VOC concentration measurements.
- Trained unsupervised autoencoder model for anomaly detection in plasma emission spectroscopy, achieving differentiation of unknown molecular compounds at ppb-to-ppm concentrations from baseline air spectra without prior training on target molecules, enabling generalized detection across diverse chemical compounds.
- Built a datalake for storage and querying of spectroscopy raw and clinical data complying to FAIR and GDPR standards.

Labelfuse B V — **Dec 2022 –March 2025**
Applied Research Engineer — *Eindhoven, Netherlands*

- Built multi agent LLM system in healthcare domain for CDC and South African ministries, deploying across 5 healthcare data warehouses with 80% improved time to analytics.
- Fine-tuned 14B parameter language model using LoRA and DPO on 12,000 clinical query pairs, achieving sub-800ms inference latency.
- Developed multi-sensor detection pipeline and scalable video processing platform for drone-based applications, achieving 96% accuracy at 35 FPS on edge devices and processing 500+ hours of footage for habitat mapping leading to partnerships with HP and Intel (links: Case Study 1, Case Study 2).

Realment Labs Pvt Limited — **July 2018 – October 2019**
R&D Engineer — *Bengaluru, India*

- Led development of computer vision-based retail analytics platform processing real-time customer behavior data, increasing product visibility by 34% and reducing customer churn by 37% through NLP-driven insights.

OPEN SOURCE CONTRIBUTIONS

Core contributor to SimpleStories dataset, an enhanced version of Anthropic's TinyStories for small language model training. Built custom Llama implementation and model-as-a-judge evaluation framework. Co-authored research paper submitted to NeurIPS 2025 with open-source release (links: arXiv, Huggingface)

Core contributor to OpenSim-RL framework for musculoskeletal simulation research using Reinforcement Learning with PPO at University of Groningen (link: Github)

RESEARCH PROJECTS

Deep Reinforcement Learning for Musculoskeletal Prostheses Simulation — **August 2021 – July 2022**
Masters thesis supervised by Dr Prof Raffaella Carloni — *Groningen, Netherlands*

Implemented PPO algorithm with imitation learning and bio-mechanical domain knowledge to achieve 93% similarity with natural gait and 15% improved training speed, developing a validation framework based on musculoskeletal energy models and actuator metrics (link: paper)

Surface defect detection using computer vision models — **June 2022 – August 2022**
Joint collaboration between Tata Steel Europe and University of Groningen — *Wijk aan Zee, Netherlands*

Developed surface defect detection system achieving 92% accuracy through supervised ResNet18 model, with automated pipeline for unlabeled images using MobileNet and Vision Transformers. (link: paper)

EDUCATION

MSc in Artificial Intelligence and Cognitive Science — University of Groningen, 2022
Bsc in Computer Science Engineering — Visvesvaraya Technological University, 2018

AWARDS AND ACHIEVEMENTS

Represented and demonstrated the Labelfuse product for real-time incident prevention at World Summit AI (2024)

Winner of Most Valuable Project award at Summer of AI Internship competition for successful completion and deployment of the solution at Tata Steel Europe (2022)

Awarded the employee of the year at Realment Labs for building a solution for retail analytics using computer vision and deep learning (2019)

Led a team of students for an NGO to install solar powered light bulbs for 100 houses that receive no electricity in rural parts of India. The event received an all India press coverage and recognition from Govt. of India (2016)