

Satvik Kishore

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EDUCATION

Duke University | *Master's in Interdisciplinary Data Science*. GPA: 4.0 *Expected May 2023*
Coursework: Computer Vision and Medical Imaging, Natural Language Processing (NLP), Machine Learning, Statistics, Causal Inference, Data Engineering, Deep Learning

Indian Institute of Technology Madras | *Bachelor of Technology in Materials Engineering*. *Jul 2013 – May 2017*

SKILLS

- R, SQL, Python, PyTorch, TensorFlow, Docker, Tableau, Amazon Web Services, A/B Testing
- **Certification:** AWS Machine Learning Specialty

PROFESSIONAL EXPERIENCE

Proofpoint Inc. & Duke University *Aug 2022 – Present*
Part Time Machine Learning Engineer

- Benchmarked methods to reduce variance in ML model predictions when models are retrained with fresh data.
- Developed novel methods based on knowledge distillation to reduce model variance metrics (Prediction Churn) by 35%.

Interpretable Machine Learning Lab, Duke University under Dr. Cynthia Rudin *Jun 2022 – Present*
Graduate Research Assistant

- Designed computer vision breast cancer detection model based on case based reasoning architecture in PyTorch.
- Achieved SOTA AUC scores of 0.95 while improving the interpretability of the model by making it more sensitive to fine-grained features in images.

Data+, Rhodes Information Initiative *May 2022 – Aug 2022*
Machine Learning Engineer Intern

- Developed Gaussian Process Regression Machine Learning models for earthquake early warning systems in Nepal.
- Implemented pipeline that takes in input the seismograph wave data, transforms the data to wave features, then uses the trained model to predict intensity of oncoming earthquakes to trigger alarms.
- Improved upon the SOTA R^2 scores by 30%. The model is set to be installed in earthquake detection facilities in Nepal.

St. John's Research Institute | Public Health Research *Jul 2017 – May 2021*
Data Scientist

- Standardized and centralized health data from multiple sources into a single repository to be used by multiple institutions.
- Secured \$200,000 in funding from the Bill and Melinda Gates Foundation to lead a project on analyzing the impact of improved household income on child undernutrition in India.
- Modelled child undernutrition in the country through Geospatial Machine Learning Models using PyTorch. Identified three key regions with potential for 15-25% reduction in undernutrition through improved monthly income.
- **Publication:** Kishore S, Thomas T, Sachdev H, et al. Modeling the potential impacts of improved monthly income on child stunting in India: a subnational geospatial perspective. *BMJ Open* 2022;12:e055098.

Lighthouse Datalabs | Data Science Consulting *May 2016 – Dec 2016*
Data Science Intern

- Developed machine learning models to help a healthcare blog client perform demographic based ad targeting.
- Trained tree-based ensemble models to classify user's age and sex, improving AUC by 10%, ad click-through rate by 5%.

PROJECTS

- Brain Tumour image segmentation using U-nets. *Spring 2022*
 - Developed an AI tool for brain tumor image segmentation for precise neurosurgery, using TensorFlow.
 - Implemented a "U-Net" Deep Neural network architecture to achieve a DICE similarity score of 81%.
- CT Scan Imaging Optimization. *Spring 2022*
 - Conducted a study on optimization of radiation exposure in CT scans to balance image quality and lesion detection.
 - Trained YOLO models to reduce radiation exposure by 50% while maintaining lesion detection capability.
- AWS Powered Tweet Generator. *Fall 2021*
 - Implemented and dockerized NLP model to retrain on fresh daily data and generate trend-relevant tweets.
 - Engineered AWS cloud solution to schedule NLP docker containers to run everyday. Brought down costs to < \$1/month.