Abdul Hannan Kanji

FAIRNESS AND SAFETY IN ML | APPLIED DATA SCIENTIST @ SWAYAI | UMASS AMHERST

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Education

University of Massachusetts, Amherst *Amherst, MA*

MASTER OF SCIENCE IN COMPUTER SCIENCE *Sep 2019 — June 2021*

- **Courses** — Machine Learning , Neural Networks, Systems for Data Science, Advanced NLP, Probabilistic Graphical Modeling, Reinforcement Learning, Algorithmic Fairness, Advanced Algorithms
- **Research** — Microsoft fairlearn project, Seldonian safety project.

PES Institute of Technology *Bengaluru, India*

BACHELOR OF ENGINEERING IN COMPUTER SCIENCE *Sep 2011 — June 2015*

- **Courses** — Data Mining, Natural Language Processing, Algorithms, Data Structures, Cloud Computing and Big Data

Skills

Languages Python, C++, Java, JavaScript, C.
Frameworks PyTorch, Scikit-learn, AWS SageMaker, Pandas, Tensorflow, Flask, Android, Heroku, MongoDB, Node.js.

Experience

SwayAI *Lowell, MA*

APPLIED DATA SCIENTIST *Jul 2021 — Present*

- Build intelligent solutions for multiple clients with their data using Machine Learning using AWS SageMaker. Built the entire workflow from data preprocessing to deployment of a UNet model for detecting visual anomalies in industrial surfaces.
- Using the solutions built for the clients, building a self-service no-code platform for users to be to develop these intelligent workflows themselves.

Reich Lab, UMass Amherst *Amherst, MA*

RESEARCH ENGINEER *Jun 2020 — May 2021*

- Managed the **visualization, data validation and the build pipeline** for COVID-19 forecast hub, the data source for the official CDC COVID-19 Forecasting page.
- Built a new data validation pipeline for incoming submission that reduced validation time from around 20 minutes to less than 1 minute.

Intuit Inc. *Mountain View, CA*

SOFTWARE DEVELOPMENT ENGINEER 2 *Aug 2015 — Jul 2019*

- Developed on-device validation of receipts using MLKit before manual transcription. Saved $4500 per month.
- Worked on Quickbooks Mobile Apps developing features end-to-end to production, including handling production releases in multiple mobile and desktop teams.
- Developed a **"build once, deploy on all devices"** framework which is used by all product offerings across Intuit on various platforms.

Internships

- **Intuit Inc** (Jan 2015 — Jul 2015) | **EMC Corporation** (Jun 2014 — Aug 2014)

Projects

Seldonian Safety Project *Amherst, MA*

GRADUATE STUDENT RESEARCHER *Sep 2020 — Jul 2021*

- Working with Prof. Philip Thomas on the Seldonian Approach for **training AI models under safety constraints** as proposed his Science paper.
- Implemented extensions to **better sample the data using stratification**. With this method, the probability of obtaining a safe solution increased by around 60% in the worst case sampling of the data in a Binary Classification problem.
- Library publicly published on Github and documentation present at seldonian-fairml.readthedocs.io.

Microsoft Fairlearn *Amherst, MA*

GRADUATE STUDENT RESEARCHER *Jan 2020 — July 2020*

- Worked with Microsoft Responsible AI team on the fairlearn repository where I **implemented fairness constraints** like Equality of Opportunity and made improvements to their ExponentiatedGradient algorithm.
- Ran experiments on certain **enhancements on scalability of ExponentiatedGradient** along with creation of a notebook to benchmark fairlearn against Tensorflow Constrained Optimization.

Volunteering

Make A Difference (MAD) Foundation *Bengaluru, India*

MATHEMATICS TEACHER *Jul 2016 — Mar 2017*

MAD teaches disadvantaged kids in shelter homes across India. Taught Mathematics to a 7th grade class for 1 academic year on weekends.