Abdul Hannan Kanji

Fairness and Safety in ML/RL | Research Engineer@ Reich lab | Graduate Student@ UMass, Amherst

☎ (650) 314-8021 | ✉ akanji@cs.umass.edu | 🏠 abdulhannan.in | ○ hannanabdul55 | in hannanabdul55

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

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

Experience

Reich Lab, UMass Amherst
Amherst, MA

Research Engineer
Jun 2020 — PRESENT

- Manage the **visualization, data validation and the build pipeline** for COVID-19 forecast hub, the data source for the official CDC COVID-19 Forecasting page.
- **Build and scale automated workflows** for the weekly operations on large amounts of forecast data.
- 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.
- Founding member of the cross-platform Quickbooks desktop app.
- 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 202 — PRESENT

- 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.

Publications

Sitaram, D.; Phalachandra, H.L.; Harwalkar, S.; Murugesan, S.; Sudheendra, P.; Ananth, R.; Vidhisha, B.; **Kanji, A.H.** ; Bhat, S.C.; Kruti, B., **"Simple Cloud Federation"** in Modelling Symposium (AMS), 2014 8th Asia , 23-25 Sept. 2014.

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.