Abhishek Vijayakumar

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LINKS

Website: **inkyubeytor.github.io**
GitHub: **inkyubeytor**
LinkedIn: **abhishek-vijayakumar**

EDUCATION

CARNEGIE MELLON UNIVERSITY

BS in AI/CS, MS in ML
4.00 / 4.00 | Aug 2019 - Dec 2023

UNIVERSITY OF MINNESOTA

Dual Enrollment
4.00 / 4.00 | Aug 2014 - May 2019

SKILLS

PYTHON

scikit-learn, XGBoost, LightGBM
PyTorch, Keras
spaCy, NLTK , Gensim
NumPy, Pandas, matplotlib, seaborn
Flask, BS4

OTHER

C, Rust, Web Dev, SML, R, MySQL,
LaTeX, GCP, Cordova, Agile

SELECTED COURSEWORK

AI, ML, Regression, Deep Learning
CV, NLP, Speech Processing
Computational Forensics & AI
Constructive Logic
Convex Optimization
Parallel Computer Architecture
Algorithm Design and Analysis

PUBLICATIONS

[1] T. Byun, V. Sharma, A. Vijayakumar, S. Rayadurgam, and D. Cofer. Input prioritization for testing neural networks. In *2019 IEEE International Conference On Artificial Intelligence Testing (AITest)*, pages 63–70, 2019.

[2] T. Byun, A. Vijayakumar, S. Rayadurgam, and D. Cofer. Manifold-based test generation for image classifiers. In *2020 IEEE International Conference On Artificial Intelligence Testing (AITest)*, pages 15–22, 2020.

EXPERIENCE

TEACHING ASSISTANT | Introduction to Machine Learning, Principles of Functional Programming

Jan 2021 - Present

- Taught recitation sections of up to 250 people.
- Hosted office hours with one-on-one and small group assistance.
- Wrote course assignments and exams.

META INTERN | Software Engineer - FAIAR

May 2022 - Aug 2022

- Worked on applied research for ads supply sensitivity modeling.
- Implemented and analyzed traditional and novel meta learner model variants for causal inference using LightGBM and XGBoost ensembles.
- Produced significant improvements in model performance, model stability, and model training cost.
- Developed, advocated for, and implemented new methods of uplift model evaluation in a causal inference setting.
- Performed white-box model analysis using SHAP and advocated for new methods of feature evaluation.

CMU LTI RESEARCH | Code-Switched NLP

Sep 2021 - May 2022

- Evaluated methods of generating multilingual code-switched text.
- Developed a Devanagari transliteration model reflecting modern Hindi practices.
- Identified issues and proposed solutions in standard code-switched text evaluation GLUECoS.

VERIZON INTERN | Data Science - System Performance

Jun 2021 - Aug 2021

- Created machine learning models to determine causes of poor handovers.
- Analyzed network parameters to identify impacts of tunable parameters.

CMU HCII RESEARCH | AI UX Tools, Verdant

Jan 2020 - Aug 2020

- Developed a pipeline for summarizing research interview data and comparing textual data to find outliers.
- Developed a JupyterLab extension in React/Redux and TypeScript.
- Developed a pipeline to classify chart images.

PROJECTS

QA-QG SYSTEM | NLP Semester Project

- Designed and built an end-to-end system to generate and answer questions on the text of Wikipedia articles.
- Worked with spaCy, NLTK, and BERT technologies.

LU PARTITION | Princeton Gerrymandering Project

- Implemented algorithms for use in automatic generation of district maps.