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/C++/CUDA, 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.