

# Abhishek Vijayakumar

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## LINKS

Website: [inkyubeytor.github.io](https://inkyubeytor.github.io)  
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## EDUCATION

**CARNEGIE MELLON UNIVERSITY**  
**BS IN AI/CS**  
 4.00 / 4.00 | 2019 - 2023

**UNIVERSITY OF MINNESOTA**  
**DUAL ENROLLMENT**  
 4.00 / 4.00 | 2014 - 2019

## SKILLS

### PYTHON

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

### WEB

React, AngularJS  
 JavaScript, TypeScript, HTML, CSS

### OTHER

C, Rust, SML, R, MySQL,  
 $\LaTeX$ , GCP, Cordova, Agile

## SELECTED COURSEWORK

Artificial Intelligence  
 Machine Learning  
 Regression  
 Computer Vision  
 Natural Language Processing  
 Computational Forensics & AI  
 Constructive Logic

## 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

**DATA SCIENCE INTERN | VERIZON - 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.

**TEACHING ASSISTANT | FUNCTIONAL PROGRAMMING**  
 Jan 2021 - May 2021

- Taught recitation sections of up to 30 people.
- Developed new course assignment content.

**CMU REU | VERDANT: COMPUTATIONAL NOTEBOOK VERSIONING**  
 May 2020 - Jul 2020

- Developed a JupyterLab extension in React/Redux and TypeScript.
- Developed a pipeline to classify chart images.

**CMU INDEPENDENT STUDY | AI-ASSISTED USER RESEARCH TOOLS**  
 Jan 2020 - May 2020

- Developed a pipeline for summarizing research interview data and comparing textual data to find outliers.

**UMN RESEARCH INTERN | ARCHITECTURE AND ANALYSIS FOR HIGH-ASSURANCE AUTONOMY**  
 Sep 2018 - Aug 2019

- Developed methods of test generation for neural networks using VAEs.
- Empirically analyzed input prioritization methods for lowering the cost of labeling neural network test data.
- Wrote interfaces and automated data collection tools for X-Plane 11.

## SELECTED PROJECTS

**LU PARTITION | PRINCETON GERRYMANDERING PROJECT**

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

**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.

**EDUPASS | JA NATIONALS - FedEx ACCESS AWARD**

- Designed and built a cross-platform application to track student attendance and analyze activity during flexible hours.
- Led the company as CTO, working with schools on deployment.
- Established Agile process in the team and worked with overseas development team to coordinate enhancements.
- Developed AngularJS/Cordova frontends with LAMP backend.