VAIBHAV GUPTA

I am a curious student motivated by minimalism and optimization to design machine learning solutions that can automate daily tasks and change how we interact with the world using technology.

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CERTIFICATIONS:
Google | IT Support
IBM | Data Science
IBM | Applied AI

RELEVANT COURSEWORK:
CS374: Algorithms & Models of Computation
CS233: Computer Architecture
CS225: Data Structures
ECE313: Probability with Engineering Applications
ECE210: Analog Signal Processing
STAT400: Statistics & Probability

SKILLS:
C++, Java, Python, JavaScript, HTML/CSS, SQL
Machine Learning, Data Science, Android Development

Updated 05/2021

EDUCATION

University of Illinois at Urbana-Champaign *Urbana, IL | 2019–2023*
B.S. in Computer Science | GPA: 3.95/4.00
Minors: Electrical Engineering, Statistics, Mathematics

Adlai E. Stevenson High School *Lincolnshire, IL | 2015–2019*
GPA: 4.72/4.00

EXPERIENCE

Tech Mahindra | IBM Power360 Intern *Schaumburg, IL | 07/2019–09/2019*

- Applied SQL querying, regression modeling, and statistical analysis to explore and manipulate various types of data in Python.
- Developed, trained, and tested multiple facial classification models on images and videos using OpenCV in Python.

ACTIVITIES

Android App | Google Play *06/2020–08/2020*

- Designed, developed, and self-published Android game on Google Play using Java and Google Play API.
- Involved UI/UX design, asset/data management, graphics rendering, game/physics engine creation, and device/memory optimization.

Professional Certification | Google/IBM *05/2019–10/2019*

- 6-month course for entry-level job in IT covering system administration, infrastructure, security, networking, and operating systems.
- 3-month course in data analysis/visualization, databases/SQL, and machine learning in Python. Used k-means clustering to classify/segment neighborhoods in Toronto using Foursquare API as capstone project.
- 2-month course in AI applications using OpenCV and IBM Watson for image classification, natural language processing, and chatbots.

Independent Research | Paper *08/2018–05/2019*

- Developed, trained, and evaluated custom Q-learning model in Python to learn to play Nim optimally through self-play via reinforcement learning.
- Researched and conducted experiment to optimize model parameters and tested against custom expert and random models.

RECENT PROJECTS

Airport Graph | C++ | Project

- Models domestic U.S. airports and flights using open-source datasets.
- Implements Dijkstra, Prim, and Floyd-Warshall algorithms to find shortest paths between airports and airport connectivity/centrality.

Maze Solver | C++ | Project

- Generates random acyclic rectangular mazes using disjoint sets and finds various solutions using BFS/DFS traversal algorithms.
- Visualizes searches and solutions through custom animations.

Mosaic Converter | C++ | Project

- Implements recursive NNS using k-d trees to convert images to tile mosaics by mapping each region to a tile with the closest color.