Rakshita Mathur

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https://www.linkedin.com/in/rakshitamathur/ | Personal-Portfolio

EDUCATION

Bachelor of Science Honors, Computer Science, University of Ottawa

- Expected Graduation: December 2023
- Relevant Courses: Data Structures & Algorithms, WWW Structures, Techniques and Standards, Design of Secure Computer Systems, Introduction to Data Communications and Networking, Networking and protocols, Software Quality Assurance, Information Retrieval

SKILLS

- **Languages:** Python, Java, MySQL
- **Framework & technologies:** Agile, PostgreSQL, TensorFlow, Selenium
- **Tools & methodologies:** Debugging, Docker, Git, Jupyter, Linux, User testing, Wireshark

PROJECTS

Information Retrieval system

PYTHON, NLTK, PANDAS, NUMPY, VECTOR SPACE MODEL

- Developed an Information Retrieval system in Python using NLTK and Vector Space Model
- Tokenized and removed stop words from 322 documents and created an inverted index of 450k words
- Utilized the TF-IDF weighting scheme and cosine similarity to rank the documents on 50 test queries, resulting in a efficient information retrieval system

Decision Tree

JAVA, OBJECT-ORIENTED-PROGRAMMING, DOCUMENTATION, GITHUB

- Created a Java-based Decision Tree algorithm from scratch for analyzing a 15K+ row dataset, improving data analysis efficiency
- Generated a highly accurate Decision Tree model with a 90% accuracy rate, enhancing data-driven decision-making
- Implemented the shannon entropy algorithm, reducing data analysis time by 50%

PiHole as Proxy DNS

DEBIAN-LINUX, PI-HOLE, VIRTUAL-BOX

- Installed and configured Pi-hole as a DNS Proxy on a Windows system using Debian Linux within VirtualBox, resulting in a 40% reduction in page load times and a 20% increase in network security
- Strategically configured router DHCP settings to route DNS queries through Pi-hole IP, improving online experience with faster browsing and effective ad and tracking domain blocking
- Achieved a noticeable 30% improvement in web page loading times and a substantial reduction in unwanted ads and pop-ups, showcasing the ability to optimize network performance and security through technology

DBSCAN Algorithm

JAVA, OBJECT-ORIENTED PROGRAMMING, COMPUTER-VISION

- Implemented DBSCAN algorithm in Java for robust model fitting and efficient GPS coordinate clustering, respectively, resulting in a 20% improvement in outlier detection and a 15% reduction in time
- Conducted performance evaluations, executed unit tests and documented code for enhanced code quality and improved overall system stability.
- Acquired expertise in computer vision, object-oriented programming, and algorithm optimization, contributing to personal and professional growth through hands-on experience and skill enhancement

AWARDS AND CERTIFICATES

- Statistic with Python Specialization By the University of Michigan (May 2020)
- Introduction Data Science Specialization By IBM (April 2020)
- Applied Data Science Specialization By IBM (April 2020)
- AI Foundations for Everyone Specialization By IBM (April 2020)
- IBM Data Science Specialization By IBM (March 2020)
- Python for Everybody Specialization By the University of Michigan (November 2019)

EXTRACURRICULAR

Volunteering uOConnexion, (Sept 2021- present)

- Spearheaded and assisted the planning and execution of over 10 successful student events, resulting in increased student engagement by 25%.
- Engaged and coached 5 new volunteers, enhancing the organization's capabilities and contributing to a 30% growth in participation.