KARAN VISHWAKARMA

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SUMMARY

Detail-oriented and results-driven software engineer with a robust background in Bioinformatics and data analysis. Eager to enhance skills through innovative medical research projects and contribute to the advancement of scientific knowledge.

EDUCATION

Master of Science in Computer Science, University of Illinois, Chicago, GPA: 4.0/4.0 — **Jan 2021 – Dec 2022**
Bachelor of Engineering and Technology from IET, DAVV Indore, India, GPA: 3.7/4.0 — **August 2016 – June 2020**

TECHNICAL SKILL SET

Programming languages	Python, Java, R, C#, C++, C, SQL
Database	MySQL, SQLite, MongoDB, SharedPreferences, Neo4j
Web Development	Django, PHP, CSS, ASP.NET, Angular 8, JavaScript, .NET, Typescript, ReactJS
Development Ecosystem	Aivia, Imaris, Visual Studio, Microsoft Excel, CellProfiler, Hadoop, JIRA, OmicsBox, 10x Genomics
Operating system	Windows, Linux, MAC OS X, Debian 11

RESEARCH EXPERIENCE

University of Chicago, Medicine: Research Technician — **August 2023 – Present**
Technologies: Python, Amazon Web Services, NLP, Django, Imaris, Aivia, 10x Genomics, Random Forest, Excel, OmicsBox, CellProfiler
Description: Worked in Kovler Diabetes Center for analysis of the 3-D model of pancreas for detecting vulnerability of patients to diabetes.
• Designed digital 3-D models for exocrine & endocrine tissue, and used Support Vector Machine algorithms for vascular detection of cells.
• Utilized Python, PyTorch, and Matplotlib for comprehensive representation of parameters and heatmaps for comparative data analysis.
• Developed Python-based scripts for the intelligent detection of a 3-D model for vasculature and extended the existing work on diabetes.

University of Illinois at Chicago (UIC): Research Assistant — **Aug 2021 – Dec 2021**
Technologies: Python, Matlab, PyCharm, Regression model, PyTorch, Matplotlib, Excel
Description: Conducted comprehensive analysis to anticipate the susceptibility of individuals to cardiovascular diseases.
• Constructed a knowledge graph in Neo4J after analyzing UIC's healthcare data for mapping the weighted mappings between factors contributing to cardiovascular diseases from data of 30 patient samples.
• Plotted heatmaps and trained supervised learning algorithms to classify patients based on recall and precision values.

Sentiment Analysis for Stock Prediction: Machine Learning — **Jan 2020 – June 2020**
Technologies: Python, Support Vector Machine, Jupyter Notebook, TF-IDF algorithm, Datapr
Description: A software for collecting user reviews and tweets for predicting the stocks using sentiment analysis.
• Designed the user interface using fragments on activities and nested layouts for better and more efficient user readability.
• Integrated libraries like Matplotlib and pandas for better visualization and efficient manipulation of data points respectively.

WORK EXPERIENCE

Michaels Store, Inc: Software Development Engineer 2 — **Jan 2023 – July 2023**
Technologies: Python, Java, D3.js, Azure Cloud, S3, Gunicorn, Nginx, JavaScript, LangChain, Spring Framework, NLP
Description: A software for the search team to visualize the knowledge graph for the 2 million products for Michaels Inc.
• Designed and implemented user interface using Django framework, HTML, and JavaScript for parsing data for knowledge graph.
• Deployed the application on a virtual machine with Gunicorn for scalability and Nginx as a reverse proxy for the application.
• Developed and designed the structure of the Knowledge graph using Neo4J for product category segregation in the Michaels Store.

Great Lakes ADA Center, UIC: Graduate Research Assistant — **Feb 2021 - Jan 2022**
Technologies: Java, JavaScript, MySQL, Linux, JUnit, Python, Spring Boot, REST, JDBC
Description: A software for improving the accessibility of the ADA official website in the healthcare department at University of Illinois.
• Designed and implemented user interface using NodeJS, D3.js, Vue.js and JavaScript for parsing data for ADA official website.
• Integrated natural language processing algorithms to increase search relevancy for accessibility seminars through embedding vectors.
• Utilized Spring Boot to construct the native API's and MySQL for the additional relational accessibility data in a tabular format.

Xohani Solutions Pvt. Ltd: Software Engineer — **Jan 2018 - Dec 2020**
Technologies: Java, NodeJS, Mongoose, Express, MongoDB, MQTT network protocol, Docker, S3, Spring Boot
Description: A software that allows users to keep track of the vehicles through parameters like speed, fuel lid status, signals, etc.
• Designed the whole system utilizing different components in ReactJS and docker for handling large-scale microservices.
• Integrated MQTT network protocol and Google Volley for instant retrieval of information and data through cloud servers.

CERTIFICATIONS AND AWARDS

• Microsoft Student Partner — **Dec 2018 – Jan 2020**
• Algorithms and Data structures from Stanford University Coursera — **April 2017 - June 2017**