Manmohit Singh

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Education

University of Manitoba,
Master of Science in Computer Science
2017 – 2020 | Winnipeg, Canada

Guru Nanak Dev University,
B.Tech. in Computer Engineering
2012 – 2016 | Amritsar, India

Skills

Languages :
Java, Python, R, C#, C++, HTML, SQL, NoSQL, JavaScript, Android, JSON, XML, UML.

Software and Tools :
AWS, GCP, Apache Hadoop, Spark, and MapReduce, Jenkins, Docker, GIT, RESTful API, MATLAB, PyCharm, Eclipse, NetBeans, Open CV, Slack, Apache Tomcat, Putty.

Databases :
Oracle, MySQL, MongoDB, Tableau.

Operating Systems :
Windows, Linux, Mac OS, Android.

Publications

- Parallel implementation of DDNA model for option prices on cloud resources, *Manmohit Singh, R. Thulasiram, A. Thavaneswaran, in SSCI 2020, Canberra, Australia.*
- Fuzzy option pricing using a novel data-driven feed forward neural network volatility model, *Aera.* Thavane., *R. Thulasiram, J. Frank, Zimo Zhu and Manmohit Singh, in FUZZ-IEEE 2019, New Orleans, USA.*

Summary

- Masters in Computer Science, with 2+ years of experience in executing data-driven solutions, full-stack development, and maintenance of websites, and software components.
- Well versed in Object Oriented Programming, Algorithms, Data Structure, and Design Patterns.
- Experienced at using predictive data modeling, and analyzing data mining algorithms to deliver insights and implement action oriented solutions.

Professional Experience

Real Infotech, *Software Developer*
January 2016 – July 2017 | Amritsar, India

- Worked with clients, to analyze their needs, then design, develop, and test the software in order to meet those needs.
- Managed the full life-cycle development of applications and full-stack development of websites.
- Designed schemas and built databases using Oracle and SQL Server for maintaining application data on servers.
- Point of contact with clients for requirement gathering, knowledge transfer, and implementation.

Student Life office, University of Manitoba,
Web Developer (contract, student employee)
June 2018 – May 2019 | Winnipeg, Canada

- Maintained, managed and updated the office website and a section of UM Today magazine using RedDot and WordPress.
- Designed web application forms using HTML, CSS, and JavaScript. Planned and organized events, and other office tasks.

Marlene Street Community Resource Centre, *Technical Support*
April 2020 – August 2020 | Winnipeg, Canada

- Managing and maintaining there website using Squarespace.
- Meticulously identified and rectified technical errors with computers and sound and video equipment.
- Organizing, conducting social events virtually and participating in Winnipeg Harvest drives.

Research Experience

Cloud Computing and Computational Financial Derivatives Lab, University of Manitoba, *Graduate Research Assistant*
September 2017 – May 2020 | Winnipeg, Canada

- Developed a model for stock or option price forecast using neural networks for predicting volatility and computed prices using Monte Carlo simulations in parallel on cloud resources.
- Implemented MapReduce, data analysis, scrapping and estimates using R and Python. Worked on Google's GCP and AWS's EMR.
- Teacher Assistant/ Grader for courses Analysis of Algorithms and Data Structures COMP 3170, Computer Organization COMP 3370, and Analysis of Algorithms COMP 2080.

Projects

Anonymization of CCTV surveillance video stream
Developed a tool to anonymize the camera surveillance videos to study the movement of people, i.e. by preserving the identity of people by means of blurring, pixelization, and foreground masking.

Languages

English

French

Punjab Police Dept. (PPD) website prototype

Worked on full-stack development of prototype for the PPD website. Key features: advanced search, pixel-by-pixel image comparator.

Advice for online CNN algorithm

Evaluated the concept of introducing advice in online orthogonal k-server CNN algorithm and studied its advice complexity.

Stock market prediction

Improvised stock price prediction using feed-forward neural networks with the Monte-Carlo pricing method.
Outperformed existing state-of-the-art prediction models.