[CARL SHEN]

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[Highlights]

Fast learner who has excelled as a computer engineering student at the University of Waterloo with a 93.1% average, ranking 2nd in my class.

Learning enthusiast, with experience using cutting edge big data and Internet of Things technologies, including coauthoring 2 publications, as well as interesting and meaningful personal and work term projects.

[Skills]

Languages – Java | Javascript | C# | Python | C++ | Matlab | Assembly

Technologies/Frameworks – SAP HANA | Apache Spark | Microsoft Azure | Node.js | Hadoop | Android

Concepts – AJAX | ReST | OData | SQL | MVC | Geospatial prefix trees | Machine Learning | Cryptography

[Experience]

SAP – Software Developer | Big Data Tooling – May to Aug 2017

Designed and developed features and bug fixes for the HANA Database Explorer web app using Javascript within a Node.js environment.

Implemented a debug editor to interface with existing debugger service.

Designed and revamped big data tabular data preview filtering features.

Improved catalog browser for viewing databases and schema objects.

University of Waterloo – Undergraduate Research Assistant | Department of ECE | Dr. Vincent Gaudet – Jan to Apr 2017

Improved scalability and performance of LDPC decoder algorithm simulation software in C by using OpenMP to increase parallelism.

Communication's Research Centre Canada – Junior Engineering | Network Applications – Sep to Dec 2016

Developed Java, Python, and C# applications for the Spectrum Environment Analysis system using Apache Spark and Microsoft Azure.

Implemented data analysis algorithms for automated batch processing of sensor data using Spark, Azure Data Factory, and SQL Server, improving scalability, and execution time from 3 hours to 5 minutes.

Developed a prototype real time sensor manager service using Spark Streaming to handle Azure Event Hub sensor status events.

Designed and built prototype data analysis flow for aggregating and producing on-demand reports from WiFi sniffer data using Apache Spark, a Python ReST service, and a custom Javascript user interface.

Tigercat – Software Developer | Telematics – Jan to Apr 2016

Designed and built features of a C# application for monitoring data from telematics devices, including a tool and service to decrypt, import, visualize, and export data from detailed diagnostic log files.

[Awards]

Engineering Upper Year Scholarship
Microsoft Tuition Scholarship
Richard and Elizabeth Madter Engineering Entrance Scholarship
President's Scholarship of Distinction and Research Award
PEO London Chapter Scholarship

[Publications]

Cluster Computing 2017 (Vol 20) – A user behavior prediction model based on parallel neural network and k-nearest neighbor algorithms

IEEE CSCWD 2017 – A novel WiFi-based indoor localization system

[Education]

University of Waterloo – BASc Candidate | 2B Computer Engineering – Expected 2020
Cumulative Average: 93.1%
Term Dean's Honor List: 2A, 1B, 1A
2A Rank: 2/163, Average: 91.4%

[Projects]

Dynamic Geospatial Data Visualization Tool – Leveraged Apache Spark, Apache Druid, Leaflet, and a Geohash algorithm to build an interactive data visualization tool for dynamically aggregating, filtering, and processing location and time stamped data.

Real Time Twitter Trends Analysis – Developed Spark Streaming script in Java that performed basic data analysis on tweets related to a search phrase.

ReST Cryptography Server – Built C# service that handled requests to upload and decrypt/encrypt files.

Facebook Chat Bot for Lists – Developed list chat bot that interfaced with a SQLite database.

Indoor Navigation Android App – Implemented step detection and route finding algorithms to provide directions and track a user's position within pre-mapped indoor rooms.

Smart Bed Monitoring System – Used force sensor data to monitor bed-related activities by implementing a supervised machine learning generated decision tree algorithm in Java.