Hossein Sharifzadeh

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RESEARCH INTERESTS

Cloud Computing
Distributed Systems and Big Data
Federated Learning
Computer Networks
Database

EDUCATION

Amirkabir University of Technology (Tehran Polytechnic) Sep 2016 - Dec 2020
Undergraduate Overall GPA: 3.18
Department of Electrical Engineering
Thesis: Improving **Cloud Services Security** by implementing **"homomorphic"** encryption
Supervisor:Prof. **Hassan Taheri**

National Organization for Development of Exceptional Talents 2016
High School Diploma In Mathematics and Physics Overall GPA: 4

RESEARCH EXPERIENCE

PARSIAN ROBOTICS LAB May 2018 - Feb 2019
Member of AI Team *Prof. M.A.Khosravi*

· Experience of working with Linux; Ubuntu and ROS framework
· Learning C++ and object-oriented programming.
· Implementing CMU voice recognition package named Pocketsphinx on robots to enable vocal command.

PARSIAN ROBOTICS LAB Feb 2019 - April 2020
Senior member of Electronic Team *Prof. M.A.Khosravi*

· FPGA programming using Verilog and VHDL.
· Experience of PCB designing using Altium Designer.
· Designing and implementing two way error detection system protocol based on UART

COGNITIVE ROBOTICS LABORATORY Aug 2019
Member of Team *Prof.S.Shiri*

· Member of expedition team into FIRA Robo World Cup 2019 South Korea
· Working on path planning algorithm and computer vision for RoboChallenge League

WORK EXPERIENCE

AMIRKABIR UNIVERSITY OF TECHNOLOGY Sep 2020 - Jan 2021
Data Transmission Teaching Assistant

· containing syllabus like; protocol layers and services, reliable data transfer and introduction with network security.
· under supervision of **professor. Hassan Taheri**

Brtech (Hamrah-e-Avval) Mar 2020 - present
Big Data Engineer

· Work on Hadoop Ecosystem and tools like Hive, Yarn

· Work with distributed queues Zookeeper, Kafka and Avro
· Work with Elasticsearch, Logstash, Kibana and Beats for collecting data specially logs and metrics
· Analyse and process data with Spark and Flink
· Visualise the result with Grafana
· Core R&D member for Bigdata solutions in MCI

Brtech (Hamrah-e-Avval) Apr 2019 - Mar 2020
DW/BI Engineer

· Working with Oracle RDBMS and Tools like: ODI - OBIEE - Oracle Cloud
· SQL and PL/SQL skills and database and ORACLE tools like Toad, ODI, OBIEE, and OCDM
· Working with data modeling tools like SAP Powerdesigner, Erwin and designing Database
· Built and deployed ETL packages, focusing on high-availability, Fault Tolerance, and Auto-Scaling

SKILLS

Computer Languages	SQL, Python, Scala, Bash Script, C/C++, MATLAB, LaTeX
Software & Tools	Spark, Kafka, ODI, PowerDesigner, Oracle DB, Hive, Git

RELEVANT COURSES

Artificial Intelligence Computer Science Department
Search algorithms, logical agents and introduction with ML, neural networks, genetic algorithms and machine vision

Machine learning Coursera Stanford University
Linear regression, Neural networks, unsupervised learning

Big Data Analysis with Scala and Spark Coursera EPFL and CMU University
RDDs Transformations and Actions, Cluster topology, pair RDDs and operations, partitioning, Dataframes, Datasets

Cloud Computing Basics (Cloud 101) Coursera
scalable and distributed computing, IAAS, PaaS, SaaS, FaaS, Azure API

Data Science Math Skills Coursera Duke University
Computer Vision Basics Coursera University at Buffalo
Advanced Telecommunication networks Course of MSc

HONORS AND AWARDS

3rd Place Robo Challenge Simulation League 11th - 16th Aug 2019
11th - 16th Aug 2019, Changwon, South Korea *FIRA Robo World Cup*

· Path Planning algorithm implemented on ROS framework and Gazebo was being used for simulation environment.

Technical Committee Member 1 - 4 Mar 2019, Tehran, Iran
Simulation League *Amirkabir Robotics and Artificial Intelligence Competitions*

· Simulation league divided into two sections of soccer and path planning challenge

Ranked top 0.5% Among 160,000+ Students in the Nationwide University Entrance Exam
Jul 2016 , Tehran, Iran

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NOTABLE PROJECTS

Improving cloud systems security by implementing homomorphic encryption
Sep 2020 - Present

- **Homomorphic encryption** is a type of encryption which allows execution of most logical functions on encrypted data whithot decryption of data.
- Homomorphic encryption is potentially useful in cloud computing or any kind of IaaS or PaaS applications.
- Homomorphic data transmission written in Python by using pystf and torch libraries

Calculating Realtime Usage of Mobile Data for Hamrah-e-Avval Subscribers
Jun 2020

- Spark code written in Scala
- Creating kafka consumer and reading from kafka topics
- Aggregating and joining RDDs
- Inserting Dataframe into Hive table

Sorting and Indexing Most Used Languages in Wikipedia Pages
May 2020 *Coursera Bigdata Course*

- Spark code written in Scala
- Reading collected data by EPFL university in dump file **HERE**
- Aggregating and transforming RDDs
- Reduce RDDs and computing most mentioned languages

Implementing K-means Clustering Algorithm on Data of Stackoverflow Posts
Jun 2020 *Coursera Bigdata Course*

- Spark code written in Scala
- Reading collected data by EPFL in dump file university **HERE**
- Clustering based on scores and programming languages
- Aggregating and joining RDDs

Calculating the Time People Allocate to their Daily Activities
Jul 2020 *Coursera Bigdata Course*

- Spark code written in Scala
- Reading collected data by kaggle in dump file **HERE**
- Classifying cumulative time each person allocate to works in each group of "Primary needs", "Work", and "Others"
- Aggregating data based on people's age, gender, and employment status
- The goal is to identify how much an average person allocates to each group of works and how it is different between each group of people

PUBLICATIONS

Parsian Extended Team Description Paper
THE ANNUAL ROBOCUP INTERNATIONAL SYMPOSIUM

- PARSIAN 2020 Extended Team Description Paper.