

# DARIUSH SALAMI

Amirkabir University of Technology, Tehran, Iran

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## EDUCATION

2016 – 2019, Amirkabir University of Technology,

MSc in Computer Engineering – Software

Project Title: An Improved Fraud Detection Algorithm in Telecommunication Using Call Detail Record (CDR) Processing

Supervisor: Dr. Seyed Majid Noorhosseini

Thesis Score: 18.7

GPA: 17.55/20

2011 – 2016, Shahid Beheshti University of Tehran

BSc in Computer Engineering – Software

Project Title: Designing and Implementing a Website for The Software Testing Lab

Supervisor: Dr. Hasan Haghighi

## RESEARCH INTEREST

- Machine Learning
- Deep Learning
- Natural Language Processing
- Fraud Detection
- Big Data
- Distributed Machine Learning

## PUBLICATIONS

- S. Momtazi, A. Rahbar, **D. Salami**, I. Khanijazani, “A Joint Semantic Vector Representation Model for Text Clustering and Classification” (Published in the Journal of AI and Data Mining<sup>1</sup>)
- **D. Salami**, S. Momtazi, “Recurrent Convolutional Neural Networks for Poet Identification” (Submitted to the Journal of Digital Scholarship in the Humanities)
- **D. Salami**, A. Rahbar, M. Razzazi, “Parkinson disease detection using hand tremor and walking pattern” (TO BE SUBMITTED)

## AWARDS

- Top 0.005% in national university undergraduate entrance exam among 284k participants
- Top 0.002% in national university graduate entrance exam among 30k participants

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<sup>1</sup> [http://jad.shahroodut.ac.ir/article\\_1457.htm](http://jad.shahroodut.ac.ir/article_1457.htm)

## TEACHING ASSISTANTSHIPS

- **Introduction to computer science and programming**, Instructor: Dr. Mohammad Hossein Moaiyeri, Shahid Beheshti University
- **Advanced Programming**, Instructor: Dr. Behnam Ghavvami, Shahid Beheshti University

## RESEARCH EXPERIENCES

- **Research Assistant (RA) at Amirkabir University of Technology, 2016 – 2017**
  - Supervisor: Prof. Dr. Mohammad Reza Razzazi
  - Research Topic: Developing a mobile application to detect Parkinson Disease in early stages and monitoring the patient. The project aimed to detect Parkinson Disease using sensors of Android devices and Machine Learning algorithms.
- **Research Assistant (RA) in Large Scale Machine Learning at Amirkabir University of Technology, 2017 – Ongoing**
  - Supervisor: Prof. Dr. Mehdi Dehghan Takht Fooladi
  - Research Topic: Developing an improved fraud detection algorithm in the Telecommunication Industry via processing Call Detail Records (CDR). Our purpose was developing an algorithm using Deep Learning and Neural Networks and implementing this algorithm on a big data infrastructure (Apache Spark) to detect fraudulent behavior in Telecommunication Industry in a reasonable time and with proper accuracy.

## LANGUAGES

- English (TOEF: 106 - R27, L27, S28, W24)
- Farsi (Native)
- Azerbaijani Turkish (Mother Tongue)
- Turkish (Advanced)

## UNIVERSITY COURSES

- Advanced Databases, Master, 17/20
- Advanced Algorithms, Master, 17.25/20
- Advanced Software Engineering, Master, 17.2/20
- Natural Language Processing, Master, 17/20
- Distributed Systems, Master, 17.7/20
- Data Structures, Bachelor, 16.3/20
- Discrete Mathematics, Bachelor, 17.25/20

## ONLINE COURSES

- Machine Learning, by Stanford University (98/100)
- Complete Guide to TensorFlow for Deep Learning with Python, by Jose Portilla
- Neural Networks and Deep Learning, by deeplearning.ai (92/100)
- Improving Deep Neural Networks: Hyperparameter tuning, Regularization, and Optimization, by deeplearning.ai (100/100)
- Structuring Machine Learning Projects, by deeplearning.ai (100/100)
- Convolutional Neural Networks, by deeplearning.ai (97.8/100)
- Sequence Models, by deeplearning.ai (100/100)
- Mathematics for Machine Learning: Linear Algebra, by Imperial College London (98/100)
- Hadoop Platform and Application Framework, by University of California
- Big Data Essentials: HDFS, MapReduce and Spark RDD (with Honors), by Yandex (98.7/100)
- Big Data Analysis: Hive, Spark SQL, DataFrames and GraphFrames (with Honors), by Yandex (99.5/100)

## ACADEMIC PROJECT

### 2019 - Ongoing, Rectified, A Model Repository for AI and Machine Learning Researchers

The most interesting project on which I have ever worked is Rectified. We are designing and developing a model repository for researchers who want to publish their model to the community either only for testing or as an open source model. They can deploy and serve their model on Rectified, and let other researchers play with their model. This project is my favorite one because it has the best of both worlds: Machine Learning and Microservice. We are working with a great variety of technologies from Tensorflow to Kubernetes in this project.

[Rectified.ai](https://rectified.ai)

### 2019, Telecommunication Fraud Detection System

During my master thesis, I designed and implemented a fraud detection system in the telecommunication industry. This system has three major modules. The first module is for data augmentation. Through this module, users can augment data with three different algorithms. The second module has been built for training and evaluating seven algorithms with four completely different approaches. The final module can detect fraud using previously trained models either from a static file or from a stream of data using Message Broker technologies (like RabbitMQ).

### 2017, Current Word and Next Word Prediction Library

In this library, I have implemented the current word and the next word prediction capability for English and Farsi languages. I used the N-Grams algorithm for this library, which is available on Github for the Android operating system. To predict precisely, I

developed a keyboard for Android and published it on a local app store (Cafebazaar). Having installed it on their devices, the users helped me to extract the frequency of words and use the frequencies in the library.

<https://github.com/ayhansalami/Android-Word-Predictor/>

## SKILLS

- Programming Languages: Python, Java, PHP, JavaScript(Node.JS), Shell
- Machine Learning Tools: MLlib, SciPy, SKLearn, NumPy, Tensorflow, Keras
- Big Data Technologies: Spark, Hadoop, HiveQL, SparkQL, GraphFrame
- Container based technologies: Docker, Kubernetes, Telepresence, Kubeflow
- Application Development: Jira, Bamboo, Sonar, Bitbucket, Confluence, Agile/Scrum
- Version Control: Git, SVN
- Web Technologies: HTML, CSS, JavaScript, Angular, Ionic Framework, Express.JS, Slim Framework (PHP), Client-Side Databases
- Mobile Technologies: Android, Apache Cordova
- Document Presentation: LaTeX, Mendeley

## HOBBIES

- Fitness
- Basketball
- Soccer
- Listening to Music
- Watching Movie
- Learning

## REFERENCES

Dr. Seyed Majid Noorhosseini

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Dr. Mohammad Hossein Moaiyeri

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