Navid Madani

I have received my BSc. in computer engineering - software at the Department of Electrical and Computer Engineering, University of Tehran. Currently I am a senior machine learning engineer at Tap30 Co. where we develop state of the art solutions for online taxi fleet problems.

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EDUCATION

University of Tehran , B.Sc. , Computer Engineering -Software

2014 - 2019

- Cumulative GPA 3.70/4 (17.28/20)

Borhan High School, Diploma, Math and Physics Discipline

2010-2014

- GPA 4/4 (20/20)
- Ranked 151 among near 300000 students in university entrance exam

FIELDS OF INTEREST

- Deep Learning
- Reinforcement Learning
- Computer Vision
- Human Cognition

RESEARCH EXPERIENCE

Senior Machine Learning Engineer, Tap30 Co. — *Tehran*

Nov 2017 - PRESENT

Under the supervision of Dr. Hamid Mahini CTO of the company and my professor at university.

We developed first ride sharing service in Iran known as LINE.

- **Design and implementation of ride sharing intelligent services**

  Ride sharing prediction, a model to predict the probability of finding a match for each request based on temporal and spatial data. Our resulted model increased AUROC to about 0.74 more than state-of-the-art model (0.68)

SKILLS

Programming

Python/ C/ C++/ Java/ Matlab/ Verilog/ VHDL/ R/ Node.js/ JavaScript/ HTML/ CSS/ SQL/ Bash Script/ React

Technologies

Pandas/ScikitLearn/Pytorch/ Keras/Tensorflow/Spark/ HDFS/Hadoop/Airflow/OSM/ OSRM/Elastic Search/ Docker/ Mininet/ Git / Postgresql/ MongoDB/ Redis/

Languages

Persian/ English (overall TOEFL 106)

Ride sharing pricing and matching algorithms, developed a simulation environment to test and implement various matching and pricing models to optimize ride sharing performance.

- **Design and implementation of dynamic surge pricing model**

  Spatio-temporal model to **predict supply and demand**, we developed algorithms to calculate price of ride requests dynamically to **maintain an optimized and stable fulfillment rate**. Our model (A mixture of spatial latent features extracted using CNN and temporal features extracted using LSTM/GRU models, significantly enhanced the performance of our previous models)

- **ETA calculation based on driver locations**

  Create an online evolving **matrix factorization** model to calculate Estimated Trip Arrival time country wide.

- **Taxi dispatch simulation**

  A configurable dispatch simulation considering user action probabilities such as passenger give ups and give up distributions and system feedback loops.

- **Design and implementation of an infrastructure to deploy machine learning models on a distributed system.**

  Responsible for designing and implementing an infrastructure to deploy neural network models on a distributed system and training it with online data.

- **Design and implementation of ETL pipelines to prepare required datasets from real-time data**

Teacher assistant, Tehran university — *Tehran*

- **Advanced Programming** _ Jan 2017-Dec 2017
- **Data structures** _ Sep 2018 - Jan 2019
- **Design and analysis of Algorithms** _ Sep 2018 - Jan 2019

AWARDS

- Won the "**Best Undergraduate Project award**" from University of Tehran.

  My thesis was **"Match Prediction in Ride Sharing Services"** under the supervision of Dr. Hamid Mahini CTO of Tap30 and my professor at the university and later I used it in **LINE the first ride sharing service in Iran.**

- Won the **"Most Influential Project in Industry award"** from Tap30, Digikala and Hamkaran System companies.

PROJECTS

Telegram search bot | Insight Co.

- Building a search bot on top of telegram bots using Elasticsearch search engine and python to explore public groups and channels data in telegram.
- Developing a crawler in python to explore and index new channels and it's contents in telegram.

Linkedoon (Program similar to linkedin)| Advance Programming

- implemented using C++ and QT

Chat system with file sharing , Multithread | Operating System

- implemented using C language , Sockets ,and Pthread Library

Multi-client Snake Game|Computer Networks

- Implemented Using Python, PyGame and deployed on Mininet

Maze Solver | Artificial Intelligence

- Implemented in Python using informed and uninformed search methods

MLP Hardware Description for digit detection on MNIST dataset| CAD

- Designed and Implemented using VHDL on FPGA

Browser Exploitation| Network Security

- Using Kali, Windows 7, VirtualBox, and BeEF on Internet Explorer

Phishing Attack on UT's Central Authentication System (CAS) | Network Security

- Using Kali, HTTrack, The Social Engineering Toolkit (SET), and PHP

Asghar Torrent (Similar network to the BitTorrent)|Computer Networks

- Implemented Using Python, Deployed and tested on Mininet

SDN (Learning Switch) Implementation|Computer Networks

- Implemented With the ability to find spanning tree Using

Floodlight OpenFlow Controller and Java

DNS Hierarchy Simulation, TCP Implementation|Computer Networks

- Implemented Using Java and Deployed on Mininet

Atalk an actor-based programming language | Compiler Design and Implementation

- Designed and Implemented using Antlr, Java and Tested on MIPS simulator QtSpim

CFS Scheduler, Semaphore with PIP and avoidance of starvation | OS Laboratory

- implemented in the linux 2.6 kernel using C programming language

Pipelined MIPS Processor | Computer Architecture

- Capable of Hazard Detection and Data Forwarding implemented in Verilog