

Hamed Vaheb

Isfahan, Iran | 20 September 1995

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RESEARCH INTERESTS

Data Science, Machine Learning, Deep Learning, Neural Networks, Time Series Forecasting, Time Series Analysis, Social Network Analysis, Natural Language Processing

EDUCATION

M.S., Financial Mathematics

Amirkabir University of Technology (AUT)

Thesis: “Asset Price Forecasting using Recurrent Neural Networks”

Advisor: Asst. Prof. Erfan Salavati

GPA: 18.41/20 (4.0/4.0), Class Rank: 2

July 2020

Tehran, Iran

B.S., Mathematics and its Applications

Isfahan University of Technology (IUT)

Thesis: “On Decomposing Systems of Polynomial Equations with Finitely Many Solutions”

Advisor: Assoc. Prof. Amir Hashemi

GPA: 16.38/20 (3.38/4.0), Class Rank: 4

June 2017

Isfahan, Iran

SKILLS

PROGRAMMING	Proficient:	Python, C, R, \LaTeX
	Basic:	SQL, HTML, CSS, JavaScript, Lisp
SOFTWARE	IDEs:	Pycharm, Spyder, RStudio
	Tools:	Maple, Matlab, Gams, Git, Docker, Gimp
	Platforms:	Linux and UNIX
	Libraries:	Scipy, Numpy, Pandas, Stats, Matplotlib, Plotly, Scikit-learn, Keras

CERTIFICATES

- Guided Tour of Machine Learning in Finance, New York University - Coursera November 2018
- Introduction to Philosophy, University of Edinburgh - Coursera December 2018
- Fundamentals of Machine Learning in Finance, New York University - Coursera January 2020
- Social Psychology, Wesleyan University - Coursera September 2020
- Introduction to Data Science in Python, University of Michigan - Coursera November 2020
- Applied Plotting, Charting & Data Representation in Python, University of Michigan January 2021
- Computer Science for Artificial Intelligence Professional Certificate, Harvard University - edX
 - CS50's Introduction to Computer Science Ongoing
 - CS50's Introduction to Artificial Intelligence with Python Ongoing
- Applied Machine Learning in Python, Michigan University - Coursera Ongoing

BACHELOR	Bachelor of Science Thesis 	2016-2017
	<i>Title: “On Decomposing Systems of Polynomial Equations with Finitely Many Solutions”</i> <i>Professor: Amir Hashemi</i> <ul style="list-style-type: none"> Elaborated and implemented Möller’s algorithm to solve a system of polynomial equations 	
MASTER	Master of Science Thesis  	2018-2020
	<i>Title: “Asset Price Forecasting using Recurrent Neural Networks”</i>  <i>Professor: Erfan Salavati</i> <ul style="list-style-type: none"> Forecast, analyzed, and visualized two S&P stocks using LSTM and ARIMA Elaborated on the framework on which neural networks are based by proving theorems 	
COURSERA	Special Topics in Financial Mathematics 	2018
	<i>Professor: Farnaz Hooshmand Khaligh</i> <ul style="list-style-type: none"> Solved financial resource allocation and optimization problems, e.g., Markovitz in Gams  	
	Machine Learning in Finance 	
	<i>Courses: Guided Tour of Machine Learning in Finance</i> <i>Fundamentals of Machine Learning in Finance</i>	
	<ol style="list-style-type: none"> Euclidean Distance  <ul style="list-style-type: none"> Computed, analyzed, and visualized Euclidean distance between sampled points Regression   <ul style="list-style-type: none"> Applied linear and Tobit regression, visualized the latter, and reported loss Bank Failure   <ul style="list-style-type: none"> Modeled and predicted bank failures based on <i>CAMELS</i>, using logit and random forest Unsupervised Learning     <ul style="list-style-type: none"> Constructed Eigen-portfolio using PCA and developed simple trading strategy Visualized multi-dimensional data using t-SNE 	2018 2018 2018 2018
EDX	Applied Data Science with Python 	
	<i>Courses: Introduction to Data Science in Python</i> <i>Applied Plotting, Charting & Data Representation in Python</i>	
	<ol style="list-style-type: none"> RegEx  <ul style="list-style-type: none"> Extracted information from a text dataset, based on emerging patterns in strings Pandas and Stats    <ul style="list-style-type: none"> Provided analysis, statistical testing, and summary of real-world datasets, e.g., CDC immunizations and vaccines, major sport leagues, and countries’ energy indicators Matplotlib     <ul style="list-style-type: none"> Evaluated visualizations using Alberto Cairo and Edward Tufte’s theories and principles Visualized datasets and exhibited meaningful patterns through representations 	2020 2020 2021
	Computer Science      	
	<i>Course: CS50’s Introduction to Computer Science</i>	
EDX	<ol style="list-style-type: none"> C: Luhn Algorithm  Scrabble  Readability  Caesar’s Cipher  Runoff Election  WAV Volume  Image Filter   Recover JPEGs  Inheritance  Spell-checker   SQL <ul style="list-style-type: none"> Data processing, working with databases HTML <ul style="list-style-type: none"> Web development using HTML, CSS, and JavaScript 	2021 Ongoing Ongoing

LANGUAGES

- **English:** Fluent **TOEFL** Score: 112 (**R:** 29, **L:** 27, **S:** 28, **W:** 28)
- **Persian:** Native **German:** Beginner **Japanese:** Beginner

TEACHING EXPERIENCE

Teaching Assistant of Stochastic Processes (Graduate Course)

Spring 2018

Professor: Erfan Salavati (Amirkabir University of Technology)

- Functioned as a liaison between the professor and students by providing weekly handouts, additional contents and sessions that enhanced exam preparedness
- Resolved problems encountered by students both inside and outside of class
- Implemented and presented some of the course's methods and algorithms in **Matlab**

AWARDS AND HONORS

- Ranked within top **3%** among 5000 participants in Iranian University Entrance Exam for graduate school
- Received national undergraduate and graduate full scholarships

REFERENCES

- **Dr. Erfan Salavati**
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