

Mahdi Mir

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EDUCATION

Master's in Theoretical Economics, TeIAS, Tehran, Iran

2019 – 2022

- Full-tuition **scholarship** with a stipend for graduate studies.
One of 16 awardees **nationwide**.
- Thesis: “Do Iranian mutual funds follow momentum or anti-momentum strategies?”
Supervised by Mahdi Heidari.
- GPA: 4

B.Sc. in Electrical Engineering, Sharif University of Technology, Tehran.

2013 – 2019

- **Ranked 162nd** in nationwide university entrance examination for Bachelor programs among more than **250K** participants.
- Thesis: “How to design an efficient solar energy production system?”
Supervised by Ali Abbaspour (**MIT & Berkeley Alumni**).

COMPUTER SKILLS

Programming Languages

- **Python, Advanced level**
 - Experience in **layout parsing** of the financial statements images using the **TableNet deep learning model**.
 - Good experience in **image processing** and **OCR**, using the Google Tesseract engine, for Persian language.
 - Deep experience in textual analysis, working with texts & regular expressions.
 - Quantitative analysis in finance.
 - Data mining and data crawling from the internet HTML pages.
 - Various data cleaning/gathering projects using Pandas, etc.
 - Various interactive **data visualization** and statistical analysis.
 - Designed a pattern match checking system for tables (2-D data).
 - Deep experience in **multiprocessing & asynchronous** processing to speed-up projects.
- **Julia, Intermediate level**
 - Dynamic programming, finding value functions quantitatively.
 - Quantitative analysis in the labor field.
 - Implementing McCall job search model and its succeeding models.
 - Various data visualization practices.
 - Done several comparative statistical analyses in the context of labor search models.
- **Visual Basic, Intermediate level**
 - Mostly coding in Excel.
- **R, Basic level**
 - Some statistical analysis
- **C, C++, Basic level**
 - Done some basic projects.
- **Bash, Intermediate level**
 - Database upgrade automation in Linux environment.

Others

- **MySQL, Intermediate level**
 - Worked with standard and global databases like **Zephyr**, **Orbis**, **OECD PATENTS**, the **Bocconi** university **PATENTS-ICRIOS** database, etc.
- **STATA, Professional level**
 - Estimation of different econometrics models, like fixed Effect, Logit & probit, ordinary OLS & etc.
- **MATLAB, Octave, Preprofessional level**
 - Mostly working with matrices, quantitative simulation & analyses
- **Dynare, Intermediate level**
 - Simulation of DSGE models.
- **L^AT_EX, Beamer, Professional level**
- **MS Excel, Word, PowerPoint, Professional level**
- **Linux (Ubuntu), Upper-Intermediate level**
- **Windows, Advanced level**
- **Mac OS, Advanced level**

RESEARCH EXPERIENCES & COMPUTER PROJECTS	Graduate Economics Student, <i>TeIAS</i>	2019 – 2022
	<ul style="list-style-type: none"> Data extraction from the mutual funds' reports' images about their holdings, using image processing methods, Google Tesseract engine and the TableNet deep learning model. As a part of my Master's thesis data gathering. Data crawling of the Iranian firms' monthly revenue from HTML & also scanned images. Replication of the paper Jegadeesh, Titman (1993), "Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency", with Iran's stocks market data. Supervised by Mahdi Heidari. Done several back-testing of trading strategies using the Zipline open source backtesting library, and AlphaLens engine. in Python. Done some adjustments in the source code of Zipline for backtesting of momentum strategies with Iran's market historical data. Replication of the paper Ng, Wu (2007), "The trading behavior of institutions and individuals in Chinese equity markets", with Iran's stocks market data. Supervised by Mahdi Heidari. Implementing McCall search & other related models with Julia. Supervised by Hossein Joshaghani. Worked with Macroeconomics databases, gathered & cleaned Iran's risk-free rate, exchange rates, gold prices and some more. 	
	Others	
	<ul style="list-style-type: none"> Authority & Innovation, Hamed Davari, University of Mannheim, Germany. Jul 2022 <ul style="list-style-type: none"> Worked with Zephyr Database, the Comprehensive M&A data with integrated detailed company information, from Bureau van Dijk, A Moody's Analytics Company Worked with Orbis database, a growing database of companies and other entities, from Bureau van Dijk, A Moody's Analytics Company Worked with OECD Patent datasets Worked with PATENTS-ICRIOS DATABASE, from the Bocconi university, Italy Iran's listed firms' employment details, Javad Shamsi, LSE, UK. Sep 2022 <ul style="list-style-type: none"> Gathered a dataset of industry and subindustry of listed firms, and their matching with standard ISIC codes version 4. Worked on adjusted/not adjusted prices of listed firms. 	
RESEARCH ASSISTANT	<ul style="list-style-type: none"> Mahdi Heidari, <i>TeIAS, 30 months</i> Hamed Davari, <i>University of Mannheim, Germany, 4 months</i> Javad Shamsi, <i>Starting Sep 2022, Ongoing</i> 	2020 – 2022 Summer 2022 2022
TEACHING ASSISTANT	TeIAS <ul style="list-style-type: none"> Fintech, Amin Shams, Fisher College of Business, OSU, USA. Macroeconomics I, <i>Hosein Joshaghani</i> Microeconomics I, <i>Sepehr Ekbatani</i> Sharif University of Technology <ul style="list-style-type: none"> Electrical Engineering Principles 	2022 2021 2020 2017
OTHER PROFESSIONAL ACTIVITIES	<ul style="list-style-type: none"> Head Manager of Economic/Financial Databases, <i>TeIAS</i> Corporate Governance Reading Group, <i>TeIAS</i> 	2021 – 2022 2021
AWARDS, HONORS & SCHOLARSHIPS	<ul style="list-style-type: none"> Full-tuition scholarship with a stipend for graduate studies, for the Master's of Theoretical Economics, <i>TeIAS</i>, One of 16 awardees nationwide. Ranked 79th in the nationwide university entrance examination for the Master's in Economics. Ranked 162nd in nationwide university entrance examination for Bachelor programs among more than 250K participants. Accepted in the first stage of national Mathematics olympiad 	2019 2019 2013 2012
LITERATURE REVIEW	<ul style="list-style-type: none"> Corporate Governance: A Brief Review of the Literature 	2020
WORKING PAPERS	<ul style="list-style-type: none"> "Do Iranian mutual funds follow momentum or anti-momentum strategies?" with Mahdi Heidari. "Good News, Bad News About Iranian Listed Firms, the First Dataset in Iran." with Mahdi Heidari. 	
LANGUAGES	English , Upper-intermediate level Persian , Native, Fluent	

**RELEVANT
GRADUATE
COURSES**

- Macroeconomics II**, *Hosein Joshaghani, TeIAS* Fall 2021
- Contents: Fiscal Multiplier & Identification in Macro, Dynamic Optimization, Bellman Equation, Continuous-Time Search Models, Discrete-Time search models, Consumption, Investment, Financial Markets.
 - Grade: *A*
- Topics in Macro, Labor Market & Search**, *Alireza Sepah-Salari (University of Bristol)* Spring 2021
- Dynamic Programming, Bellman Equation, general equilibrium models with incomplete financial markets, Huggett (1993), Aiyagari (1994), heterogeneous agents models.
- Financial Economics II**, *Farshad HaghPanah, TeIAS* Fall 2020
- Investment Management & Corporate Finance, Asset Pricing, Market Microstructure
 - Grade: *A⁻*
- Microeconomics II, Game Theory**, *Mahdi Fadaei, TeIAS* Fall 2020
- Strategic-Form Games, Mixed Strategies, Continuous Games, Bayesian Games, Extensive-Form Games, Perfect-Bayesian Equilibrium, Repeated Games.
 - Grade: *A*
- Macroeconomics I**, *Hosein Joshaghani, TeIAS* Spring 2020
- Solow growth model, Neo-Classical Growth Model, Endogenous Growth Model, Real Business Cycle Theory, Nominal Rigidity, DSGE Models
 - Grade: *A⁻*
- Econometrics II**, *Muhamad Hoseini, TeIAS* Spring 2020
- Causality, Regression, Maximum Likelihood Estimation, GMM, Binary Response Models, Selection Bias & Experiments, IV, DID, Regression Discontinuity.
 - Grade: *A*
- Financial Economics I**, *Mahdi Heidari, TeIAS* Fall 2019
- Time Value of Money, Corporate Valuation Models, Modern Portfolio Theory, Capital Asset Pricing Model (CAPM), Efficient Market Hypothesis, Introduction to Derivatives.
 - Grade: *A*
- Econometrics I**, *Layla Shiva, TeIAS* Fall 2019
- Simple Regression, Multiple Regression, Inferences, Dummy Variable, IV, Two Stage Least Squares, Simultaneous Equations Models.
 - Grade: *A*
- Mathematics For Economics**, *Erfan Salavati, TeIAS* Fall 2019
- Matrices, Linear Algebra, Concave & Convex Functions, Constrained & Un-Constrained Optimization, Kuhn-Tucker Theorem.
 - Grade: *A⁻*
- Microeconomics I**, *Muhamad Morovati, TeIAS* Fall 2019
- Choice Theory, Classical Demand Theory, Aggregate Demand, Production, Uncertainty, General Equilibrium Theory.
 - Grade: *A⁻*
- Macroeconomics**, *Morteza Zamanian, GSME at Sharif University of Technology* Spring 2019
- Bonds Market, The IS-LM Model, The AS-AD Model, The Phillips Curve.
 - Grade: *A*

**SUMMER
SCHOOLS &
SHORT-TERM
STUDIES**

- **2nd International Trade**, *Summer School, TeIAS* 2019
- **Data Science**, *Winter School, TeIAS* 2020
- **Theoretical Aspects of Data Science and Machine Learning**, *Summer School, TeIAS* 2022

HOBBIES

- Swimming, Professional Level, life-saving Certificate, from ISAF, Iran Ministry of Sports & Youth.