

# Hossein Ghafourian, E.I.T

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## **Summary Statement:**

Civil Engineering- Transportation graduate student with a strong background and hands-on experience in Design, Analysis and Optimization, who is able to work in diverse groups and learn required materials promptly and apply his knowledge to achieve superior results.

## **Education:**

### **University of Massachusetts Amherst, MA**

Master of Science in Civil Engineering, Transportation

Graduation Expected date: Dec 2018

Cumulative GPA: 3.70

### **University of Tehran, Tehran, Iran**

Bachelor of Science in Civil Engineering

July 2016

Cumulative GPA: 3.60

## **Relevant Course works:**

Traffic Flow Theory and Simulation, Highway Location and Geometric Design, Highway Engineering & Project, Traffic Engineering, Transportation System Analysis, Transportation Plan and Analysis, Stochastic Models, Intelligent Transportation Systems, Systems Engineering, Transportation Engineering, Statistics, Road Pavement, Road Pavement laboratory, Tunnel Construction, Transportation Pricing

## **Relevant Experiences:**

### **Graduate Research Assistantship**, University of Massachusetts Amherst

September 2017 - Present

- Working On “Tripod”: Sustainable Travel incentives with prediction, optimization and personalization, Sponsored by ARPA-E; Token-based applications for suggesting users alternative travel modes considering their preferences to optimize the energy consumption, instead they would be given redeemable tokens. The more saving energy is, the more tokens would be.
- Worked with a large team of PI’s, postdocs and graduate research assistants from MIT and UMass
- Conducted sensitivity analysis of “DynaMIT”; A simulation-based real-time travel incentive optimization system in the Boston area networks, assisted in implementing multi-modal functionalities for DynaMIT, generating the compatible inputs for DynaMIT and run several tests with various scenarios and programming to extract the necessary traffic data, write reports and documentations, using ArcGIS and TransCAD for visualization of the network, preparing presentations
- Presented “Road Diet approach for providing Safety” poster in the ITE annual meeting
- Conducted a project for Pioneer Valley area for 4-step travel demand model through TransCAD
- Worked on the project of simulating the Amherst road network with **TransModeler** and **Synchro** and **VISSIM**:
  - Traffic data collecting (Traffic count, Turning movement, signal Timing, ...), Traffic signal timing
  - Evaluating the improvements with replacing the pretimed intersections with the actuated and semi-actuated ones
- Wrote a review paper for “Connected and Autonomous vehicles”
- Working on “Virtual Traffic Control Devices”

### **Undergraduate Research Assistantship**, University of Tehran

September 2016-July 2017

- Led 3-person team which worked on improving the efficiency of Iran’s National Railroad Network to save energy and money
- Worked on Optimizing the number of each locomotive types to be attached to every scheduled train and allocating optimized number of assistance locomotives to specific locations of the network
- Successfully did literature review and modelling for a toy network

### **Internship**, Pournam Co., Tehran, Iran

Summer 2015

- Assistant of the Senior Designer in Designing 6<sup>th</sup> part of the “Tehran-North” highway with AutoCAD and Civil3D
- Collecting and preparing data, redesign some horizontal and vertical curves long the road, attempting to design some new shortcuts, write reports, helping in preparing the group presentations
- Supervision in the cite of construction and managed the labors in 7<sup>th</sup> tunnel digging

### **Internship**, Parsmohit Co., Tehran, Iran

Summers 2014 & 2016

- Corporation in cartography of the “National” library and supervision assistant in designing with ETABS

### **Teaching Assistantship**, “Traffic Eng.”, University of Tehran

Fall 2016

### **Teaching Assistantship**, “Mathematic 1”, University of Tehran

Spring 2015

### **Teaching Assistantship**, “Computer Programming via Fortran”, University of Tehran

Fall 2014-2015

## **Computer Skills:**

- Programming Languages: Python / C++ / MATLAB / Fortran
- Operating Systems: Linux / Windows / Macintosh
- Modeling Software: Autodesk AutoCAD / TransCAD / TransModeler /Synchro / VISSIM/ TSIS / Civil 3D / QGIS / ArcGIS/ ETABS / Water CAD / SewerCAD
- Microsoft Excel / Microsoft Word / Microsoft PowerPoint/ VIM Editor

## **Honors and Awards and Affiliations:**

**Engineer-In-Training (EIT) certification**, Vice President of the Informs (Institute for Operation Research and the Management Sciences) Student Chapter, Member of **Institute of Transportation engineering (ITE)**, **Secretary of the WTS** (Women Transportation Seminar) student chapter, Ranked top 10% University of Tehran, Rank 2 in tentative Chemistry Olympiad 2010, Member of Civil Eng. scientific community of University of Tehran, attributed to the “Brilliant talented students”, Ranked 219 in Iranian undergraduate nationwide entrance exam 2012 (among 500,000 participants), Holding “How to apply and Why?” conference 2013