Navid (David) Kalantari, PhD

#20588 Tanglewood Way, Sterling, VA, 20165

I have **18+ years** of experience in **statistical Modeling** and **machine learning**. Although most of my experience is related to transportation system modeling, I have applied most **statistical Modeling**, **machine learning, data center modeling,** and **marketing** tools to diverse applications such as **marketing, real estate**, **economy**, and **socioeconomic** prediction. I have a solid understanding of statistics in various fields, including **Statistical Modeling, Sequence Modelling, Natural Language Processing, Image Processing, and Big Data**. I do not need sponsorship and am pursuing a **machine learning**, **data scientist, modeler,** or **visualizer position**.

# Technical Skills

## Skilled in:

* **Data Management and Data Base** Development
* **Statistical Modeling** in marketing and socioeconomic systems
* **Computer Programming** and developing scripts for data analysis, management, and visualization
* **Cloud Computing** to apply machine learning tools

#### **Machine Learning and Artificial Intelligence** and developing supervised and unsupervised learning and optimization models in time series (sequence) models, Natural Language Processing (NLP, transformers including BERT, T5, XLNET, etc.), Image Processing (convolutional networks, object detection with RESNET, LENET, YOLO, MASK RCNN, MobileNet, style transfer, etc.).

* **Mathematical Optimization** includes linear, nonlinear Optimization, and heuristic algorithms

## **Project Management**

* **Big data**

## Experienced in:

* Worked with **R**, **Python** (Scikit, TensorFlow, etc.) to model travel demand, marketing, real estate, and socioeconomic data and apply Machin Learning algorithms (including **Neural Networks (CNNs, RNNs, and Transformers), Support vector Machin, K-Nearest Neighborhood**, **Regression Tree, Random Forest, Booting methods, Generalized Additive Models,** etc.
* Worked with **Power BI, Tableau, QGIS,** and **ArcGIS** for data visualization and presentation
* Formulated and implemented numerous **Mathematical Optimization** models using

#### **GAMS** and customized codes

* Hands-on experience in **Project Management** at different levels (lead, manager, and CEO)
* **Client Interaction** and **Presentation,** including public meetings and meetings with local, State, Federal, and International Stakeholders

#### Experience in Maintaining and Modification of **Software Codes** in C++, Java, and C#.

* Developing **Statistical Models** including **regularized regression**, **time series and state-space models**, **discrete choice**, and **simulation** models in many different disciplines.

#### Hands-on experience in working with **AWS** machines, redshift, s3, ec2.

* Big Data analysis with **scala/spark, dask, vaex,** and **pyspark**.

## Software Capabilities

GIS Tools: **QGIS**, Arc GIS Database Tools: **SQL**, Access

Machin Learning Tools: **R**, **Python**, Matlab, **TonsorFlow, Pytorch,**

Cloud Computing Tool: **AWS**, **MS Azure, GCP**

Econometrics Tool: R, Python, **SPSS**, LINDEP, GUASS, **SAS**, PythonBiogem, NLogit Programming Tools: **C/C++,** C#, Batch Programming, Python, R, Scala, Matlab, Visual Basic, FORTRAN

Operation Research Tools: GAMS, Lingo Data Visualization Tools: **Power BI**, **Tableau**

General Software Tools: MS Office, Photoshop, MS Project, Jira Big Data Tools: **Spark, Dask, Vaex**

# Work Experience

#### The work experiences listed below are classified based on the subject matter. I chose this way of presentation because of the wide domain of data analysis and modeling work in the projects that I was involved in and to add clarity to the methods and tools I have used in them—just naming the title of the projects my not completely convey all the work and tools that were used in each project. More information and details could be provided upon request. Some of my **more recent** project experiences include:

**More Recent Experience (Previous 5 years)**

* **SnowRelic, Lead AI/ML Scientist, USA, from Jun 2021, existing**
* Document Retrieval , Lead AI/ML , We used a RAG model with LLMs to search through financial documents and identify the potential risks of investment as well as the other questions related to the document. The search was both based on some saved documents as well as web search.
* Finetuning LLMs for a Financial Institution, Lead AI/ML, in this project, we used Llama2 and finetuned the model on both supervised and non-supervised task for the financial institution. For the supervised task we developed questions and answers using OpenAI and Langchain on one of their documents.
* Financial Reconciliation, used Azure table recognition to extract bank statements and match them versus stated accounts. The process included OCR, table recognition, and matching. The matching processes took into account both exact matched and soft matches using fuzzy matching process.
* Chatbot Development for Healthcare, Lead AI/ML, this project was implemented with the GCP. In this project we automated the CRM system. Call was transcribed, classified, and stored in a data base on GCP and then classified based on the discipline. The classification was done using an NLP model. Then the Chats were handled using Dialogflow and stored also in the same location. The results were then shown in Looker for business users to analyze.
* ChatBot Finetuning for Healthcare, Lead AI/ML, this is an ongoing project that has been recently started. In this project we are gathering some example chats from transcripts of the existing CRM. There chats are being used to finetune Open AI ChatGPT using LoRA.
* Churn Prediction Modeling, Lead AI/ML, in this project, I developed a churn prediction model and implemented a retraining and inference pipeline on AWS. The project involved model error analysis and monitoring as well as classification modeling.
* Impact Tracking, Lead AI/ML, in this project, I developed an analysis procedure to investigate the effect of some health incentives on patients. The model scored the control and treatment samples, estimated the propensity score, and developed multiple classification models.
* Pipeline Optimization, Lead AI/ML, in this project, I developed an optimization model to optimize the scheduling of commodities in the pipeline. In addition, machine learning models were developed to identify parcels within each batch of the commodity shipped. This was developed using statistical modeling techniques. The model also involved a metaheuristic model sitting on top of a simulator developed by the team. I was responsible for developing all the methodologies and oversight the development.
* Stock Market Manipulation Identification, Senior Data Scientist, in this project, I developed and validated different machine learning and deep learning model to identify various market manipulation patterns such as Marketing the Close, Layering, Front Running, and Resting Orders. The model included Random Forest, Autoencoders, Deep Learning and Bayesian Neural Networks.
* Text Summarization Model and Classification, Senior Data Scientist, in this project, I developed a text summarization model based on BERT, XLNet, and T5 models to summarize comments and classify them based on the departments within the client’s organization.
* **CloudBC**, *Senior Data Scientist*, USA, Remote, October 2019 - Jun 2020
* Quantization of Deep Neural Network Models, Senior Data Scientist, In this project, I implemented different quantization and model pruning techniques on DNN models. In particular, I worked on the BERT model and the RESNET model. The project was an R&D model for implementation in new hardware.
* Production Line Monitoring using Computer Vision, Senior Data Scientist, A computer vision model (YOLO) was used to identify production line issues such as missing pieces is the production line. The model finetuning involved multiple data augmentation methods.
* Data Center Simulation, Lead Data Scientist, In this project, I developed a Deep learning model to expedite the simulation of data in large-scale data centers. The model replicated the results of the NS3 simulator. The deep learning model was implemented in C++.
* **Autometrics**, *Senior Data Scientist*, USA, Remote, October 2019 - Jun 2020
* New Vehicle Sales Projection, Senior Data Scientist, In this project, I developed an ensemble model of an LSTM, UCM, and Profit model to predict the sale of new vehicles. The projection was targeted for a 3-month prediction. A GAM model was used to aggregate the results.
* Daily Activity Reconstruction , Data Scientist, We used a GAN model structure to develop and reconstruct the daily activity patterns of the residents of a city in the USA. The model was a Conditional GAN, which was conditioned on the socioeconomic characteristics of the households within the study region.
* **AECOM**, *Consulting Manager*, USA, Arlington, VA, Feb 2017 - October 2019
* Rhode Island Statewide Travel Demand Model, Project manager and Lead AI/ML, Developed travel demand forecasting model to predict the mode choice using multinomial logit model, trip production and attraction using regression based model and the traffic assignment using mathematical programming models.
* Estimating Passenger Travel Corridors and Passenger Highway Flow Data for the United States, Project manager, to enhance the NextGen data by expanding the zone structure to improve the precision of interstate traffic assignments. Reallocated trips based on the newly introduced zones and redistributed intrazonal and interzonal trips. The national traffic assignment model incorporates factors like stops for long-distance trips, interzonal traffic assignment, and peak period traffic volumes with special consideration of travel between time zones.
* TransForM Activity-Based Model Development, Lead Data Scientist, lead and developed a new Activity-Based Modeling framework. The modeling procedure (ActGen) was implemented in both Python and TRANSIMS. The project involved the development of an ABM framework and model estimation using state of the art time series, machine learning, and discrete choice models. As the model is a new ABM model, all model components were estimated, including the work and school location model, daily pattern generation, destination choice, mode choice, and time of day choice models. All the model components were estimated in Python and R.

**Some other projects**

##### Machine Learning and Artificial Intelligence Methods

* *Model Sparsity and Quantization: I used the Quantization method on Transform models (BERT) to reduce the model run time latency on specialized hardware devices. I also applied partition dropout of convolution layers on RESNET. Finally, both structured and unstructured pruning was performed on BERT on the attention heads and fully connected layers.*
* *Comment Summarization: I used BERT, XLNET, and T5 for comment summarization. I also used BERT and LDA to classify the comment and assign them to different departments within the organization. Finally, I did a sentiment analysis to extract the sentiments of the comments.*
* *Fault Detection: I used RESNET and YOLO to identify at-fault devices. The model was used to identify the types of issues in the devices (scratched, etc.) and count the number of objects such as screws on them.*
* *Relation of Logo and Market Survival: Using a historical database of logos, I developed a computer vision model that estimated the chance of survival based on its logo. The model was later augmented with other economic variables and some text descriptions of the business. The text was analyzed with a deep learning NLP model.*
* *Data Center Latency Estimation: I used a set of wavelet models, LSTM, ConvLSTM, and Highway Networks, to estimate the amount of latency in data centers. I also implemented the model in the C++ Tensorflow API.*
* *Cash Flow Forecasting: I used Hazard-based duration and neural network models to estimate the amount of cash expected to be received every month in a business based on the invoices and the payment terms of invoices.*
* *Shopper Prediction Modeling: I developed an ensemble model consisting of the Unobserved Component Model (state space time series model), Holtz Winter model, SARMA, Prophet, and LSTM neural network model combined with a Generalized Linear Model.*
* *Short-term Traffic Prediction:* I have used a Neural Network (NN) model to predict the short-term variation in traffic flow on some roadways. The NN model structure was optimized using a GA algorithm. The hybrid model was implemented in MATLAB.
* *Crash Prediction:* I used Negative Binomial, Poisson Regression model, and NN to predict the number of crashes on roadways based on the roadway attributes. The NN model was estimated in MATLAB.
* *Activity Purpose Identification:* I have used Canonical Discriminant Analysis (CDA) to identify and classify each person's daily activities based on cell phone-tracked data. Using the location of each individual and the duration and timing of their activities, the model classified the individual's activities into different categories. The model was estimated in R.
* *Travel Time Reliability Estimation:* I have used many different supervised learning methods to analyze and model the travel time reliability on Interstate Highways. The methods used include Regression, Neural Networks, Support Vector Machine (SVM), K-Nearest Neighbors (KNN), and Decision Tree (DT). I have used a different variant of each model type to find the best possible model class to use. The best model (KNN) was later optimized using GA.
* *Real Estate Housing Price Prediction:* I have used different models such as NN, KNN, and SVM to estimate the housing price using a 20-year house price inventory.
* *Commodity Shipment Value Estimation*: I classified commodities based on their truckloads and values in this project. The goal was to estimate the average value of commodities moving within a State. There were originally 42 commodity types that were later reduced into seven categories using Principle Component Analysis (PCA) and Clustering.
* *Traffic Sign identification: In this project, I developed an object detection model using YOLO to identify different traffic signs using a moving vehicle camera recording. The dimensions of the image, including size and height, location, and the condition of the sign (clarity), were also reported.*
* *Pedestrian Posture and Decision Model: Using computer vision, I worked on this project which identified the decision of a pedestrian (cross the road or not to cross) based on their posture.*

##### Data Collection and Databases:

* *Large Scale Passenger Origin-Destination Survey in more than 5 Cities*: This included designing the questionnaire, sampling strategies, and sample size estimation to estimate the number, pattern, time of day, and vehicle (mode) used for travel by the residents and non-residents in a city.
* *Image Processing Data Collection*: This included two sets of data collection efforts: tracing pedestrians' movement and the movement of vehicles. The traced data (trajectories) were then used to model the acceleration, deceleration, stopping, approaching, and distance between vehicles and pedestrians. This was done in two separate projects, one for vehicles and one for pedestrians).
* *Attitudinal Survey*: This survey was designed using a predefined sociologic questionnaire. The goal was to use the sociological survey to identify the attitudinal category ("extrovert" vs. "introvert") of each respondent and to relate them to some travel decisions made by that person.

##### Experimental Design

* *Vehicle Transaction Survey:* This survey was a State Preference (SP) survey in which the respondents were asked to choose the vehicle they would rather buy among predefined vehicles. The scenarios were designed such that each one will be orthogonal and to capture the respondent's sensitivity better. The respondents were also asked to respond to their tendency to buy electric and different automated vehicles. The experimental design was conducted in SAS.
* *Cost sensitivity Survey:* This survey was designed to analyze the sensitivity of public transport users to different characteristics of each public transit mode (product), such as the cost, waiting time, travel time, and selected vehicle characteristics. The experimental design was conducted in SAS.

##### Statistical Modeling and Prediction

*Linear Regression*

* *Number of Trips Generated:* I estimated Linear Regression models to estimate the number of trips each household makes and the number of trips that each land use attracts for different purposes. This has been done for five different cities. These models were estimated using SPSS.
* *Truck Parking Demand Model:* I estimated a linear regression model to estimate the parking demand for each potential parking location. The model was estimated using Python and R.
* *Passenger Sensitivity Analysis:* I estimated an elasticity model (using a logarithmically transformed regression model) to estimate the sensitivity and elasticity of passenger demand to different characteristics of public transport modes. The model was estimated in SPSS.

*Generalized Linear Regression*

* *Crashes Frequency model*: This model was a Negative Binomial Model and was estimated to predict the number of vehicle crashes on a 4-mile segment of an interstate highway. The model was estimated using R.
* *Illegal Parking Model*: This model was estimated using a Logistic Regression model that estimates the share of the illegal park from the total parking demand in an area. The model was estimated using R and Python.
* *Vehicle Price Depreciation Model:* I have estimated a vehicle price depreciation model based on online vehicle cost data that I extracted. I used different Generalized Linear Regression models to find the baes model structure that fits the data.

*Discrete Choice models*

* *Travelers Mode Choice*: I have used Multinomial and Nested Logit models to estimate the share of each travel mode in 5 different cities. The models were estimated using PythonBiogeme, R, and GAUSS. The models are used to predict the choice of customers among a set of mutually exclusive alternatives.
* *Daily Activity Pattern Estimation:* I used a Multinomial Logit model to estimate the type of activities that each person in a household performs during a typical day. The activities included working, staying home, shopping, etc. The model was estimated in R.
* *Child Escort Model and Household Vehicle Allocation:* This model predicted the person that escorted children to school in households. Usually, this is done by either one of the parents, and the aim of the model was to identify which parent escorts the children to school and how it is related to the vehicle allocation within the household in households with limited vehicle availability. I estimated a Multinomial Logit model to make predictions. The model was estimated in PythonBiogeme.
* *Residential Location Choice:* I have used the Multinomial Logit model to predict the residential location chosen by households. The locations are selected based on some attributes such as price, housing type, accessibility, schools, etc. This model is an important component in real estate price prediction. The model was estimated using R.

*Time Series Analysis*

* *Vehicle Sale Prediction Modeling: I developed an ensemble model consisting of the Unobserved Component Model (state space time series model), Holtz Winter model, SARMA, Prophet, and LSTM neural network model combined with a Generalized Linear Model. The LSTM model is also extended to include google trends and macroeconomic data.*
* *Vehicle Sale Share Modeling: I developed an LSTM model that uses potential shopper demand, google trends, macroeconomic data, and vehicle data to predict each vehicle's share from the total sales of each market segment.*
* *Trend Decomposition: Decomposition of shopper data into long-term, short-term, and noise components.*
* *Air Pollution Estimation:* I have used a SARMA Time Series model and neural networks to estimate the air pollution in a city based on the weather condition and traffic data. The model was also extended and used to predict the short-term passenger demand in the subway system.

*Multiple Discrete Continuous Choice Models*

* *Daily Activity Pattern of Individuals:* I have used two models to estimate the type of activities and the duration allocated to each activity by each individual in a household. The models were Multiple Discrete Continues Extreme Value (MDCEV) and Multiple Discrete Continues Nested Extreme Value (MDCNEV) models. The goal was to allocate the 24-hour time budget of each individual to some predefined activities. The models were estimated in GAUSS and R.

*Hazard Models*

* *Activity Duration Model:* I have used a Hazard model to estimate each individual's time allocated to activities. The model was estimated in R.

*Dynamic Choice Models:*

* *Vehicle Transaction Model and Market Penetration:* This model was estimated to predict the time interval between each vehicle transaction (buying and selling) and the type of vehicles purchased. The model was used as a tool to predict the market penetration of new vehicle products and market analysis. The model was estimated in R.

*Structural Equation Models:*

* *Analyzing the Effect of Individuals' Attitudes on the Choice of Public Transport:* A joint Structural Equation Model (SEM) and Multinomial Logit model were estimated to estimate the impact of attitudinal characteristics on public transport model choice behavior of individuals. I have also analyzed the effect of attitudes on each individual's number of trips on a typical day.

*Other Statistical Modeling Methods*

* *Gravity Model Estimation:* I have estimated gravity-type models to predict the number of trips made between two locations (the number of interchanges). The models were estimated using VISUM and TransCad software packages.
* *Car Following Behavior:* This model predicts the distance between vehicles and vehicles' acceleration and deceleration behavior when they follow each other.
* *Social Force Model of Pedestrian Movement:* The Social Force model predicts pedestrians' walking behavior. The behaviors include their distance from each other and how fast they choose to walk.
* *Population and Workforce Prediction:* I have used cohort analysis and simulation methods to predict population by age group, household size distribution, and workforce in different regions.

##### Simulation

* *Traffic Flow Simulation:* I have simulated the traffic flow in more than 20 intersections and roadways using traffic simulators.

##### Optimization

* *Parking Location Optimization:* I have used discrete optimization methods to optimize the location of public parking in a city. The candidate locations included a set of predefined potential parking locations, and the goal was to find the optimal location (subset) of these markings based on the budget constraint. The model was designed and solved in GAMS.
* *Prioritization of Crash Hotspots:* I have used Dynamic Programming to provide a 10-year schedule for improving crash hot spots based on budget constraints. The model was solved in MATLAB.
* *Bus Network Optimization:* I have used a Genetic Algorithm (GA) to optimize the bus routes and their service frequency in a city.
* *Transportation Budget Allocation:* I have used different Metaheuristic Methods to optimize the budget allocation to transportation projects. The methods used are Ant Colony Optimization (ACO), Simulated Annealing (SA), Particle Swarm Optimization (PSO), Tabu Search (TS), and Genetic Algorithm (GA).
* *Nonlinear Optimization:* I have applied different nonlinear optimization algorithms in many projects. In particular, assigning the travel demand to the roadway network requires nonlinear Optimization. I have done this for numerous projects.
* *Satellite Frequency Planning: In this project, I developed an optimization model to solve the satellite frequency allocation and handover plan in consolation and MEO satellites.*

##### GIS Data Visualization

I have used GIS in most of the projects I worked on. I have used GIS tools such as ArcGIS and QGIS to visualize data and make spatial analyses. I have also used the GDAL and OSGEO packages in Python and R to create, join, and analyze Shapefiles.

# Education

BS in Civil Engineering*, Tehran Central University*, Tehran, Iran, May 2003. Some specific activities include:

* Transportation and traffic engineering: *Signal Setting, Geometric Design, and Marking*
* Pavement design and Soil Mechanics: *Using AASHTO*
* Design and analysis of steel and concrete structures: *Design of 6 Story Buildings*
* Structural analysis: *Matrix Analysis*

MSc in Transportation Planning*, Iran University of Science and Technology*, Tehran, Iran, Feb2006 Thesis with [Dr. Shariat,](http://www.iust.ac.ir/find.php?item=32.6143.7365.en) Subject: *Identification of a risk index for the road network in case of major disasters*. Some specific researches include:

* Public transportation network design:
* Traffic simulation and Modeling: *Car Following, Lane Changing, Shock Wave Analysis*
* Intelligent Transportation Systems: *Probe Vehicles, Travel Time Estimation, APTS*

Ph.D. in Transportation Planning*, Iran University of Science and Technology*, Tehran, Iran, Nov 2012 Dissertation with [Dr. Afandizadeh](http://www.iust.ac.ir/find.php?item=32.6111.7217.en), Subject: *Multi-modal network design in urban transportation networks*. Some specific researches include:

* Econometric modeling and advance travel demand modeling: *Activity Base Modeling, Trip Scheduling, Discrete choice modeling*
* Congestion pricing: *First Best and Second-Best Pricing, Multiclass Pricing, Cordon Pricing*
* Public transport planning: *Route Design, Network Modification, Time Table setting, Fleet Assignment*
* Micro and Macroeconomics: *Welfare Economy, Taxation, Subsidies, Consumer Surplus, Social Welfare*
* Transportation network analysis: *Traffic Assignment, Dynamic Traffic Assignment, Public Transport Assignment, Network Design*

PostDoc Associate, *University of Maryland*, College Park, MD, USA March 2019.

Research on Statistical Modeling, Discrete Choice models, Data mining, and Activity-Based Modeling.

# Some Certificates

* Generative AI with Large Language Models*: Deeplearning.ai and AWS*
* IBM Advanced Data Science Specialization*: IBM*
* Machine Learning Engineering for Production (MLOps) Specialization*: Deeplearning.ai*
* Data Science Certificate*: John Hopkins University*, Washington DC, USA.
* Machine Learning Certificate: *Stanford University*, USA.
* TensorFlow Certificate: *Deeplearning.ai*.
* Deep Learning Specialization: *Deeplearning.ai.*
* Natural Language Processing: *Deeplearning.ai.*
* Machine Learning Engineering for Production (MLOps): *Deeplearning.ai.*
* Advance Data Science with IBM: IBM
* AWS Certificate: Certified in Machin Learning and Amazon SageMaker.

# Some Papers

### Peer Review Journal Papers

* 1. Shahriar Afandizadeh, Diyako Sharifi, Navid Kalantari, Hamid Mirza Hossien, Using Machine Learning Methods to Predict Electric Vehicles Penetration in the Automotive Market, Scientific Reports, 2023
  2. Hamid Mirza Hossein, Ali Bakhtiari, Navid Kalantari, Inferring Socioeconomic Characteristics from Travel Patterns, Journal of Regional and City Planning, 2023.
  3. Navid Kalantari, Hamid Mirzahossein, Pooyan Najafi, Travis Waller, and Xiang Zhang Continuous Network Design Using Partial Linearized Subgradient Methods, Transportation Research Record, 2023
  4. Mohammad Ali Arman, Navid Kalantari, Abolfazl Mohammadian- Joint Modelling of Household Vehicle and Activity Allocation: Statistical analysis and discrete choice modeling approach, *Transportation research record,* 2015
  5. Navid Kalantari, S. Jusseph Sajedi, Ramin Khavarzade, Abolfazl Mohammadian Willingness-to-Pay Method to Estimate Effect of Accessibility on Property Price, *Transportation research record,* 2014
  6. Hojjat Rezaeiestakhruie, Navid Kalantari, Mohsen Babaei- New Methodology for Synthesizing Population in Metropolitans- *Journal of Traffic and Transportation Engineering*, 2014
  7. Shahriar Afandizadeh, Mohammad Ali Arman and Navid Kalantari – An ant colony system algorithm for the time-dependent network design problem- *International Journal of Optimization in Civil Engineering*, 3(4), pp: 511-526., 2013
  8. Shahriar Afandizadeh, Navid Kalantari, and Hojjat Rezaeestakhruie- A Partial Linearization Method for Multi-Objective Continuous Network Design Problem with Environmental Considerations - *International Journal of Environmental Research*, Volume 6, Number 2, Spring 2012
  9. Shahriar Afandizadeh, Arash Jahangiri, Navid Kalantari -Identifying the optimal configuration of one-way and two-way streets for contraflow operation during an emergency evacuation, Natural *hazards*, 2012
  10. Shahriar Afandizadeh, Seyed Bahman Moghimidarzi and Navid Kalantari- Presenting an Optimization Model for Signal Setting - *Asian Journal of Industrial Engineering*, Volume: 4, Issue: 1, 2012
  11. Shahriar Afandizadeh, Maryam Yadak, Navid Kalantari -Simultaneous Determination of Optimal Toll locations and Toll Levels in Cordon-Based Congestion Pricing Problem (Case Study of Mashhad City)- *International Journal of Civil Engineering*, Volume 9, Number 1, 2011
  12. Arash Jahangiri, Shahriar Afandizadeh, Navid Kalantari - The Optimization of Traffic Signal Timing for Emergency Evacuation using the Simulated Annealing Algorithm - *Transport*, Volume 26 Number 2, 2011
  13. Shahriar Afandizadeh, Amir Hossein Zahabi, and Navid Kalalntari- Estimation of Logit models by Simulated Annealing: Case study of Isfahan- *International journal of civil engineering, Iran University of science and technology*-March 2010

### Conference Papers

* 1. Samaneh Khazraeian, Farshad Koohifar, Navid Kalantari - A Nonlinear Optimal Static Controller for Ramp Control (NOSCO) - *Transportation Research Board 96th Annual Meeting, 2017*
  2. Ramin Khavarzadeh, Navid Kalantari - Trip Purpose Estimation by Canonical Discriminant Analysis - *Transportation Research Board 94nd Annual Meeting, USA, 2015*
  3. Mohammad Hossein Zamanian, Navid Kalantari, Mehdi Amiripour- Bus Network Modification Problem: New Approach to Bus Network Design - *Transportation Research Board 93nd Annual Meeting, 2014*
  4. Hojjat Rezaeestakhruie, Navid Kalantari and Mohsen Babaei-Modelling Framework for Airport Access Mode Choice Behavior considering the Effect of Meeters and Greeters - *Transportation Research Board 92nd Annual Meeting, USA, 2013*
  5. Mohammad Ali Arman and Navid Kalantari - Statistical Modelling of Children's Travel Behaviour: Some Evidence on Cultural Effects- *Transportation Research Board 92nd Annual Meeting, USA, 2013*
  6. Hojjat Rezaeestakhruie, Mohsen Babaei, and Navid Kalantari – Mode Specific Value of Time and Value of Reliability for Different User Classes in Iran- *Transportation Research Board 92nd Annual Meeting, USA, 2013*
  7. Shariar Afandizadeh, Hasan Khaksar, and Navid Kalantari - Bus Network Design by Considering the Location of Depots: A Case Study of Mashhad - *Transportation Research Board 92nd Annual Meeting, USA, 2013*
  8. Mohammad Ali Arman and Navid Kalantari, - Statistical and Analytical Modeling of Children's Travel Behavior: Some Evidence on the Cultural Effects - *Transportation Research Board 92nd Annual Meeting, USA, 2013*
  9. Hojjat Rezaeiestakhruie, Navid Kalantari, Mohsen Babaei- New Methodology for Synthesizing Population in Metropolitans- *Australasian Transport Research Forum,* 2013
  10. Shahriar Afandizadeh, Hajar Hajmohammadi, Navid Kalantari, A Meta-Heuristic Approach to Optimal Coordinated Design of Variable Speed Limits and Ramp Metering, *10th International Congress on Advances in Civil Engineering, Middle East Technical University, Ankara, Turkey, 2012*
  11. Shahriyar Afandizadeh, S.A.H. Zahabi, Navid Kalalntari- Forecasting the traffic share and environmental impacts of BRT using discrete choice models case study of Isfahan- *8 international conferences on civil engineering, 2011*
  12. Navid Kalantari, Shahriar Afandizadeh, Hassan Khaksar- fleet optimization in urban public transportation networks- *International conference on transportation engineering- Swiss, 2008*
  13. Navid Kalantari, Afshin Shariat, Morteza Khashaypour- Urban transportation network prioritization and importance for emergency rescue- *International conference on urban disaster reduction, Taiwan 2006*
  14. Navid Kalantari, Afshin Shariat, Masoud Khodadadiyan- Routing of Hazmats for risk reduction- *International conference on urban disaster reduction, Taiwan, 2006*
  15. Navid Kalantari, Shahriar Afandizadeh-Multi modal accessibility assessment of the urban area in disasters- *International conference on urban disaster reduction, Taiwan 2006*
  16. Navid Kalantari, Afshin Shariat Risk Assessment of Road Transportation Network Based on Accessibility- *International conference on disaster management, 2005*
  17. Navid Kalantari, Afshin Shariat Road Network Accessibility Reliability in Incidents-

*International conference on supply chain management, Germany, 2004*

* 1. Navid Kalantari, Afshin Shariat-Prioritization of Road network Seismic retrofitting -

*International conference on highway and bridge retrofitting, FHWA, USA, 2004*