AFAQ KHATTAK (PhD, PEng)

Flat# 31/5, PHA E-type flats, Sector G11/4, Islamabad, Pakistan

Tel: *+92-3139855071* **E-mail:** *af.transpo@gmail.com*

PERSONAL DETAILS

Nationality:	Pakistani
DOB:	September 21, 1986
Languages:	English, Pashto, Urdu, Chinese
Career Objectives:	*Seeking a challenging position of Transportation Engineering and Planning where I can work on diversified and creative projects.*

EDUCATIONAL QUALIFICATIONS

SEPT 2013 –DEC 2017: Doctoral Degree of Traffic Engineering (Civil Engineering)

School of Transportation and Logistics
Southwest Jiaotong University, Chengdu, China
(Score: 86%)

Key Courses:

Fundamental of Traffic Engineering	Highway Transportation Characteristics
Advanced Operations Research	Statistical Methods and Data Analysis
Optimization Theory and Applications	Econometrics

Dissertation

" Analysis and Optimal Design of Urban Rail Transit Station Service Facilities: a Simulation-based optimization approach using phase-type distribution"

SEPT 2010 – JUN 2012: Masters in Transportation Engineering (Civil Engineering)

National Institute of Transportation (NIT)
National University of Sciences and Technology (NUST) Islamabad, Pakistan
(3.85/4 CGPA with Gold Medal)

Key Courses:

Pavement Analysis and Design	Transportation Planning
Traffic Engineering	Probability and Statistics
Geometric Design of Highways	Pavement Material Engineering

Dissertation

"Experimental Investigation of Factors Affecting the Resilient Modulus of Bituminous Paving Mixes using Indirect Tension Test"

SEPT 2006 – AUG 2010: Bachelors in Civil Engineering

University of Engineering and Technology - Peshawar, Pakistan
(3.62/4 CGPA)

Key Courses:

Reinforced concrete Design	Transportation engineering	Structural Analysis
Hydraulic Structures	Irrigation engineering	Geotechnical engineering
Fluid Mechanics	Environmental Engineering	Engineering Survey

Dissertation

"Testing of Model Concrete for Bridge Columns"

2004 – 2006: **Pre-Engineering**
Fazaia Degree College, Risalpur, Pakistan.

2002 – 2004: **Science**
Army Public School (Zamzama), Nowshera, Pakistan.

TECHNICAL PROFICIENCY

MS Office	VISSIM	Synchro/SimTraffic
TransCAD	AutoCAD	Primavera Project planner
SimuLink	TransCAD	Visual Basic.Net
SimEvents	Arcview GIS	Eagle point (Road calc)
KENPAVE	SPSS	MINITAB
SAP	PHstat	R-Statistics
ARENA	AnyLogic	MATLAB
STATA	SAS	PIPE

ACADEMIC WORK EXPERIENCE

Assistant Professor (Oct-2017 to Till date), at Department of Civil Engineering, International Islamic University, Islamabad, Pakistan.

Tasks Assigned

Teaching Courses: Transportation Engineering, Highway and Traffic Engineering, Probability and Statistics, MATLAB for Engineers, Engineering Economics

Research Activities: Optimal placement of Bus Rapid Transit Stations, Statistical modeling of risk taking behavior of young motorcyclists,

Administrative Activities: In-charge Departmental Quality Assurance Committee (DQAC), In-charge Departmental Final Year Project Committee, In-charge Departmental Exam Committee, In-charge Departmental Discipline Committee

Research Assistant (Doctoral Researcher) (Sept-2013 to July-2017) at National United Engineering Laboratory of Integrated and Intelligent Transportation in Southwest Jiaotong University, Chengdu, China with Project Leader: Dr.Jiang Yangsheng *(Professor)*

- Team member of a project from National Natural Science Foundation of China. *(Serial No. 51578465)*
- Team member of a project from Basic Research Project of Sichuan Province. *(Serial No. 71402149)*

Tasks Performed

- Discrete-Event Simulation Modeling of Passengers flow in the Urban Rail Transit Stations.
- Design of Transit Stations service facilities by Simulation-based Optimization approaches.
- Statistical Analysis of Passengers' Flow Data in the Transit Stations.

Lecturer (Aug-2012 to Aug-2013), at National Institute of Transportation, National University of Sciences and Technology (NUST), Islamabad, Pakistan.

Tasks Performed

Teaching: Assigned courses of undergraduate Civil and Transportation Engineering.
Research Activities: transportation pavement materials in the Transportation Engineering Laboratory.

Teaching Assistant (Feb-2011 to July-2012), at National Institute of Transportation, National University of Sciences and Technology (NUST), Islamabad, Pakistan

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JOURNAL PUBLICATIONS

Saleem, B., Hussain, A., **Khattak,A.,** Khan, A., (2021) Performance Evaluation of bacterial self-healing rigid pavement by incorporating recycled brick aggregate., *Cement and Composite Concrete.*
(Published SCI: 6.26)

Khattak, A., and Hussain, A., (2020) Hybrid DES-PSO Framework for the Design of Commuters' Circulation Space at Multimodal Transport Interchange., *Mathematics and Computers in Simulation*.
(Published SCI IF: 1.62)

Umair, M., Rehman, S., Sohail, A., **Khattak, A.**, (2020) Computation of Optimal Spacing and Density of Bus Rapid Transit Stations using Evolutionary Algorithms., *Arabian Journal for Science and Engineering.*
(Published SCI IF: 1.71)

Maria I., Hussain A., **Khattak A.,** Ahmad, K (2020) Improving the Aging Resistance of Asphalt by Addition of Polyethylene and Sulphur, *Civil Engineering Journal*.
(Published ESCI)

Khattak, A., Hussain, A., & Ibrahim, F., (2019) A PHD-DES Framework for the Performance Assessment of Multi-Lane Highways under Random Traffic Flow, *Arabian Journal for Science and Engineering***.**
(Published SCI IF: 1.71)

L Meng, M Muneeb Abid, X Jiang**, Khattak, A**., M Babar Khan (2019) Increasing Robustness by Reallocating the Margins in the Timetable, *Journal of Advanced Transportation*
(Published SCI IF: 1.69)

Khattak, A., Jiang Y. & Hussain, A (2018). Design of passengers' circulation areas at the transfer station: An automated hybrid simulation-differential evolution framework, *Simulation Modelling Practice and Theory.*
(Published SCI IF: 2.50)

Khattak, A., Jiang Y. & M.M, Abid (2018) Assessment of Passengers' Transfer Zones in the Transit Centers: A PH-Based state-dependent Discrete Event Simulation Framework, *Arabian Journal for Sciences and Engineering*
(Published SCI IF: 1.71)

Khattak, A., Jiang Y. & M.M, Abid (2018) Optimal configuration of the Metro Rail Transit station service facilities by integrated simulation-optimization method using passengers' flow fluctuation, *Arabian Journal for Sciences and Engineering*

(**Published SCI IF: 1.71)**

Khattak, A., Jiang Y., Zhu J & Hu L., (2017) A New Simulation-Optimization approach for the circulation facilities design at urban rail transit stations. *Archives of Transport.*
(Published SCOPUS & EI-Compendex)

Khattak, A., Jiang Y., Hu L. & Zhu J., (2017) Width Design of Urban Rail Transit Station Walkway: a novel *simulation-based optimization* approach. *Urban Rail Transit,*
(Published SCOPUS & ESCI)

Zhu, J., Hu, L., Jiang, Y., & **Khattak, A.** (2017) Circulation network design for urban rail transit station using a PH(*n*)/PH(*n*)/C/C queuing network model. *European Journal of Operational Research*
(Published SCI IF: 3.43)

Khattak, A., Jiang Y., Hu L & Zhu J., (2017) Modeling and Simulation of Metro Transit Station Walkway as a State-dependent Queuing System based on the Phase-Type Distribution. *International Journal of Traffic and Transportation Engineering*
(**Published)**

Jiang, Y., Yao, Z., Luo, X., Wu, W., Ding, X., & **Khattak, A.** (2017) Heterogeneous Platoon Flow Dispersion model based on truncated mixed simplified phase-type distribution of travel speed. *Journal of. Advanced Transportation*
(**Published SCI IF: 1.69)**

Jiang, Y., **Khattak, A.,** Hu, L., Zhu, J., & Yao, Z. (2016) Analytical modeling of two-level urban rail transit station elevator system as phase-Type bulk service queuing system. *European Transport - Trasporti Europei*
(Published ESCI & **EI-Compendex)**

Jiang, Y., Zhu, J., Hu, L., Lin, X., & **Khattak, A**. (2016) A G/G(*n*)/*C*/*C* state-dependent simulation model for metro station corridor width design. *Journal of Advanced Transportation*.
(**Published SCI IF: 1.69)**

CONFERENCE PUBLICATIONS

Khattak, A (2019) Level of Service of Multi-Lane highway Section under fluctuated traffic flow condition: a state-dependent Discrete-Event Simulation framework. *IEEE 5th International Conference on Transportation Information and Safety, (ICTIS) Liverpool, UK*
(**CPCI** & **EI-Compendex**)

Khattak, A (2018) Simulation-based particle swarm optimization technique for the breadth design of stairs and passageway network at interchange stations. *2018 International Conference on Smart Rail, Traffic and Transportation Engineering, (ICSTTE 2018) Seoul, South Korea*
(**CPCI** & **EI-Compendex**) (**Best paper and presentation award**)

Khattak, A. and J. Yang sheng (2016) Modeling of subway stations circulation facilities as state-dependent queuing network based on phase-type distribution. *2016 IEEE International Conference on Intelligent Transportation Engineering,* (*ICITE 2016), Singapore*

(**CPCI** & **EI-Compendex**) (**Best paper and presentation award**)

KEY ACHIEVEMENTS

- President's Gold Medal Award for excellent academic and research performance in MS Transportation Engineering.
- Qualified Professional Engineering (PE) exam in the Transportation domain.
- Chinese Government Scholarship for PhD in Traffic Engineering at Southwest Jiaotong University, China.
- Science and Technology (S&T) merit Scholarship from National University of Sciences and Technology (NUST) for MS in Transportation Engineering.
- Best conference paper and presentation award at IEEE International Conference of Intelligent Transportation Engineering in Singapore (2016).
- Best conference paper and presentation award at International Conference on Smart Rail, Traffic and Transportation Engineering in Seoul (2018).
- Successful completion of training on "Outcome-based Education System" at International Islamic University Islamabad, Pakistan
- Successful completion of training on "Methods Of Instruction" at Professional Development Centre (PDC), NUST.
- Successful completion of training on "Computer Controlled Servo Hydraulic Universal Testing System" at National Institute of Transportation (NIT), NUST.
- Have been in top 10 positions throughout in four years of BSC Civil Engineering.
- Got 1st position in athletics (100m sprint) in the inter-universities sports event at Southwest Jiaotong University, China
- Got 2nd position in athletics (long jump) at zonal level in Pakistan.

REFERENCE

Dr. Arshad Hussain
Head of Transportation Engineering Department
National University of Science and Technology Islamabad, Pakistan
Email: drarshad@nit.nust.edu.pk

Dr. Hu Lu
Associate professor
School of Transportation and Logistics
Southwest Jiaotong University, Chengdu, China
Email: hulu@swjtu.edu.cn