Masih Beheshti

PhD Student and Graduate Research Associate

@ beheshti@asu.edu   % www.masihb.com   ♀ Tempe, Arizona   🎂 April 1996   in linkedin.com/in/masih-beheshti

EDUCATION

PhD. in Civil Engineering
Arizona State University
📅 January 2022 – Present   ♀ Tempe, Arizona

- Supervisor: Dr. Hasan Ozer

M.Sc. in Civil and Environmental Engineering
Sharif University of Technology
📅 September 2018 – March 2021   ♀ Tehran, Iran

- GPA: 3.77 (17.05/20)
- Thesis: Sustainability Assessment of Preventive Maintenance Plans (Case Study: Slurry Seal and Thin Overlay)
- Supervisor: Prof. Nader Tabatabaee

B.Sc. in Civil and Environmental Engineering
Isfahan University of Technology
📅 September 2014 – September 2018   ♀ Esfahan, Iran

- GPA: 2.78 (14.63/20)

ACADEMIC EXPERIENCES

Graduate Research Associate
Arizona State University
📅 December 2021 – Present   ♀ Tempe, Arizona

- Supervisor: Dr. Hasan Ozer

Graduate Teaching Assistant
Arizona State University
📅 August 2023 – Dec 2023   ♀ Tempe, Arizona

- Course: Civil Engineering Material
- Supervisor: Prof. Narayanan Neithalath, and Prof. Michael Mamlouk

Teaching Assistant
Sharif University of Technology
📅 February 2020 – July 2020   ♀ Tehran, Iran

- Course Title: Geometric Design of Highway
- Instructor: Dr. Mohammad Reza Sabouri

Pavement Laboratory Assistant
Sharif University of Technology
📅 September 2019 – February 2020   ♀ Tehran, Iran

- Supervisor: Prof. Nader Tabatabaee

MY LIFE PHILOSOPHY

"Always challenge yourself to do more & to know more"

SCHOLARSHIPS/FELLOWSHIPS

🏆 **Support Sky Harbor Coalition Scholarship**
WTS Foundation, 2023

🏆 **Dr. Matthew W. Witczak Endowment**
Arizona Pavements/Materials Conference, 2022

PROGRAMMING SKILLS

Python   Matlab   C++

SOFTWARE SKILLS

- Microsoft Office:
  Word   Excel   PowerPoint   Access   Publisher   Power BI
- Traffic Modelling:
  PTV Vissim   Synchro
- FEM Modelling:
  Abaqus
- Road/Pavement Design and Analysis:
  Civil3D   AASHTOWare   Elmode   FAARFIELD
- Optimization and Data Analysis:
  STATA   Lingo   SPSS
- Building Structure Modeling and Analysis
  ABAQUS   Etabs   SAFE   SAP2000   AutoCAD   Revit
- Digital Image Correlation (DIC)
  Vic3D
- Life Cycle Assessment (LCA)
  SimaPro
- Other:
  Premiere   Photoshop   Illustrator   Wordpress   Google Earth Engine

Internship

Foolad Technic International Engineering Company

📅 July 2018 – August 2018   📍 Esfahan, Iran

- Project Description: Designing an industrial shed

PROFESSIONAL EXPERIENCES

Computer Technician

Isfahan University of Technology

📅 October 2017 – May 2018   📍 Esfahan, Iran

- Job Description: Worked as a part time computer repair technician for civil engineering IT department

Construction Worker

Farshadi Complex

📅 July 2017 – August 2017   📍 Farshadi Street, Esfahan, Iran

RESEARCH EXPERIENCE

Automated Construction Quality Monitoring and Inspection Protocols using Unmanned Aerial Vehicles

Supervisor: Dr. Hasan Ozer

📅 Jan 2023 – Present

- Development of protocols with the use of UAVs to provide a ubiquitous platform that can be used as an aid to be monitoring mat temperatures over wide paving areas and identifying various temperature non-uniformity patterns such as thermally segregated areas.

Assessment of Thermal and Durability Cracks in Asphalt Pavements in the Southwest Region

Supervisor: Dr. Hasan Ozer

📅 July 2023 – Present

- Thermal and durability cracking in asphalt pavements has become a major challenge for many of the transportation agencies in Arizona. Although mean temperatures do not fall below freezing temperatures in Phoenix and Tucson metropolitan areas, there are wide occurrences of asphalt cracking on residential streets and state roads that can be identified as thermal or durability cracks. The main objective of this research is to improve the durability of asphalt mixtures to prevent wide-spread cracking. This project is sponsored by Southwest Pavement Technology Consortium.

Reflective Cracking Model for Airport Asphalt Overlay Design

Supervisor: Dr. Hasan Ozer

📅 December 2021 – Present

- FAA's structural design for overlays does not consider reflective cracking. The objective of this project is to develop an HMA overlay thickness design for FAARFIELD software. This project is sponsored by the FAA.

Development of a Sustainability Assessment Computer Application

Supervisor: Prof. Nader Tabatabaee

📅 April 2020 – November 2021

- PaveSAT is a computer program capable of conducting LCA, LCCA, and performance evaluation of different maintenance strategies in order to determine the most sustainable maintenance strategy using multi-criteria decision-making methods (MCDM). PaveSAT provides a flexible framework with a variety of features. Using Qt5 framework to present a user-friendly environment, considering the uncertainty associated with LCA, LCCA, pavement performance models using Monte Carlo simulation, and a flexible life cycle inventory (LCI) are only some of the key features of PaveSAT.

RESEARCH INTERESTS

Pavement Numerical Modeling

Airport Pavement Design

Fracture Mechanics

Pavement Condition Data Analysis

Life Cycle Assessment

LANGUAGES AND TESTS

Farsi (Native Language)   ●●●●●

English (Sec Language)   ●●●●●

REFERENCES

Dr. Hasan Ozer

@ hasan.ozer@asu.edu

📍 Arizona State University

Prof. Kamil E. Kaloush

@ kaloush@asu.edu

📍 Arizona State University

PUBLICATIONS AND CONFERENCE PROCEEDINGS

📖 Journal Articles

- [Submitted, Under review] M., Beheshti, Castro S., Vedual, N., Rahman N., Al Rawahi, M., Ozer, H. (2024). "Rate Dependent C* Fracture Parameter using the Optimized Wedge-Split Test Geometry and Vision-Based Automated Crack Tip Detection". In: *Construction and Building Materials*.

- Beheshti, M., Bento, M.H.C., Ramos, C.S., Ozer, H., Duarte, C.A., Brill, D.R. (2024). "Analysis of Reflective Cracking in Asphalt Overlaid Jointed Concrete Airfield Pavements Using the 3-D Generalized Finite Element Approach". In: *International Journal of Pavement Engineering*. DOI: `https://doi.org/10.1080/10298436.2024.2346291`.

- Vedula, N., Beheshti, M., Al-Alawi, O., and Ozer, H. (2024). "Thermal Profiling of Asphalt Pavement Construction Using Unmanned Aerial Vehicle". In: *Transportation Research Record*. DOI: `10.1177/03611981241239957`.

- [Preprint] Rahman, N., Castro, S. and Beheshti, M., Vedula, N., Noorvand, H., and Ozer, H. (2023). "Development of a Cyclic Fracture Experiment for Characterization of High-Performance Asphalt Concrete Mixes". In: DOI: `http://dx.doi.org/10.21203/rs.3.rs-3681380/v1`.

⚙ Invention Disclosure

- [Under review by SI] Ozer, H., Vedula, N., Beheshti, M. (2024). *D24-166: Unmanned Aerial-Vehicle Assisted Real-Time Construction Quality Support System*. Arizona State University.

👥 Conference Proceedings

- [Podium Session] Beheshti, M., Eravathri, S.S., Salim, R., Ozer, H. (Jun, 2023). "Analysis of the Effect of Thermal Loading on Reflective Cracking in Asphalt Overlaid Jointed Concrete Airfield". In: *ASCE International Conference on Transportation and Development, Huston, TX, US*.

- [Podium Session] Beheshti, M., Tabatabaee, N. (July, 2021). "Markov Chain Performance Modeling for Slurry Seal and Thin Asphalt Overlay Using Bayesian Approach". In: *12th International National Congress on Civil Engineering, Tehran, Iran*.

- [Poster Session] Beheshti, M., Bento M. H. C., Ramos C.S., Ozer H., Duarte C.A., Brill D.R. (Jan, 2023). "Analysis of Reflective Cracking in Asphalt Overlaid Jointed Concrete Airfield Pavements Using the 3-D Generalized Finite Element Approach". In: *2023 Annual TRB Conference, Washington, D.C, US*.

- [Poster Session] Beheshti, M., Ozer, H. (Jun, 2023). "Climatic and Traffic Factors on Pavement Deterioration Trends and Mechanisms in Asphalt Concrete Overlays in Airfield Pavements". In: *ASCE International Conference on Transportation and Development, Huston, TX, US*.

- [Poster Session] Castro S., Rahman N., Al Rawahi M., Beheshti M., Ozer H. (Jan, 2023). "Rate Dependent C* Fracture Parameter using the Optimized Wedge-Split Test Geometry and Vision-Based Automated Crack Tip Detection". In: *2023 Annual TRB Conference, Washington, D.C, US*.

- [Poster Session] Liu, F., Beheshti, M., Ozer H., Al-Qadi, I. (Jan, 2024). "Machine Learning for Prediction of Fracture Parameters in the Texas Overlay Test for Asphalt Concrete Overlay Reflective Cracking". In: *2024 Annual TRB Conference, Washington, D.C, US*.

- [Poster Session] Rahman, N., Castro, S., Beheshti, M., Vedula, N.V., Ozer H. (Jan, 2024). "Development of a Cyclic Fracture Experiment for Characterization of High-Performance Asphalt Concrete Mixes". In: *2024 Annual TRB Conference, Washington, D.C, US*.

- [Poster Session] Vedula, N.V., Beheshti, M., Ozer H. (Jan, 2024). "Thermal Profiling of Asphalt Pavement Construction using Uncrewed Aerial Vehicle (UAV)". in: *2024 Annual TRB Conference, Washington, D.C, US*.

- [Podium Session] Beheshti, M., Ozer, H. (2024). "Reflective Cracking Model for Airport Asphalt Overlay Design". In: *TRB 2024 Doctoral Research Forum*.