Masih Beheshti

PhD Student and Graduate Research Associate

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EDUCATION

PhD. in Civil Engineering

Arizona State University

January 2022 – Ongoing 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)

EXPERIENCES

Graduate Research Associate

Arizona State University

January 2022 – Ongoing 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"

ACHIEVEMENTS

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

- Geospatial Analysis:
  ArcGIS Pro | Google Earth Engine
- Traffic Modelling:
  PTV Vissim | Synchro
- FEM Modelling:
  Abaqus
- Road/Pavement Design and Analysis:
  Civil 3D | OpenRoads | AASHTOWare PavementME | FAARFIELD
- Optimization and Data Analysis:
  STATA | Lingo | SPSS
- Building Structure Modeling and Analysis
  ABAQUS | Etabs | SAFE | SAP2000 | AutoCAD | Revit
- Others
  Vic3D | SimaPro | MS Office

Internship

Foolad Technic International Engineering Company

July 2018 – August 2018 | Esfahan, Iran

- Project Description: Designing an industrial shed

RESEARCH PROJECTS

Assessing the Consumption Costs of Motor Vehicles on Arizona Roads

Supervisor: Dr. Hasan Ozer

Oct 2024 – Ongoing

- This project aims to assess the consumption costs of various vehicles on Arizona's roads and bridges to inform alternative fee structures. This project focuses on the impact of different vehicle types, including EVs. The goal is to provide accurate consumption cost calculations to help close revenue gaps and improve infrastructure planning.

Automated Construction Quality Monitoring and Inspection Protocols using Unmanned Aerial Vehicles

Supervisor: Dr. Hasan Ozer

Jan 2023 – Ongoing

- 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. This project is sponsored by National Center for Infrastructure Transformation (NCIT).

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

Supervisor: Dr. Hasan Ozer

July 2023 – Ongoing

- 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

2021 – 2024

- 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.

RESEARCH INTERESTS

Pavement Numerical Modeling
Airport Pavement Design
Fracture Mechanics
Pavement Condition Data Analysis
Life Cycle Assessment

VOLUNTEER EXPERIENCE

Member of APSE Verification & Validation Task Force
2024-Ongoing

Task Forces Chair in APSE Student Committee
2024-Ongoing

Mentor for the NCIT Research Experience for Teachers (RET) Program
2024

Journal Peer Reviewer
IJPE, ACE, TRR

Conference Peer Reviewer
TRB, IRF

LANGUAGES AND TESTS

Farsi (Native Language) ●●●●●
English (Sec Language) ●●●●●

REFERENCES

Hasan Ozer
@ hasan.ozer@asu.edu
Arizona State University

Kamil E. Kaloush
@ kaloush@asu.edu
Arizona State University

PUBLICATIONS AND CONFERENCE PROCEEDINGS

Journal Articles

- [Recently Accepted] Beheshti, M., Ozer, H. (2025). "A Viscoelastic Computational Fracture Mechanics Approach for the Analysis of Thermal Reflective Cracking in Asphalt Overlaid Jointed Concrete Airfield Pavements". In: *Transportation Research Record*. DOI: TBD.
- [Recently Accepted] Zahid, A., Rahman, N., Beheshti, M., Alrajhi, A., Rowe, G., Ozer, H. (2025). "Development of an Accelerated Long-Term Aging Protocol for Simulating Asphalt Concrete Mixture Aging in Regions with Extreme Climatic Conditions". In: *Transportation Research Record*. DOI: TBD.
- 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.
- Liu, F., Beheshti, M., Ozer, H., Al-Qadi, I.L. (2024). "Prediction of asphalt concrete energy release rate from Texas Overlay Test using machine learning". In: *Road Materials and Pavement Design*. DOI: https://doi.org/10.1080/14680629.2024.2356796.
- 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*. DOI: https://doi.org/10.1016/j.conbuildmat.2024.137649.
- 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: https://doi.org/10.1177/03611981241239957.

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, Austin, TX, US*.
- [Podium Session] Beheshti, M., Ozer H. (Jan, 2025). "A Viscoelastic Computational Fracture Mechanics Approach for the Analysis of Thermal Reflective Cracking in Asphalt Overlaid Jointed Concrete Airfield Pavements". In: *2025 Annual TRB Conference, Washington, D.C, 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*.
- [Podium Session] Liu, F., Al-Qadi, I.L., Beheshti, M., Ozer H. (Jan, 2025). "Asphalt Concrete Overlay Thermal Reflective Cracking Stress Intensity Factor Prediction Using Machine Learning". In: *2025 Annual TRB Conference, Washington, D.C, US*.
- [Poster Session] Aker, S., Zahid, A., Beheshti, M., Ozer H. (Jan, 2025). "Exploring the Root Causes of Wide Thermal Cracks in the Southwestern Region of United States". In: *2025 Annual TRB Conference, Washington, D.C, US*.
- [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. (Mar, 2025). "Reflective Cracking Model for Airport Asphalt Overlay Design". In: *2025 AAPT Annual Meeting, Reno, Nevada, 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, Austin, 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.L. (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] Vedual, N., Beheshti, M., Ozer H. (Jan, 2025). "Thermal Segregation and Compaction Quality Analysis of Asphalt Pavements using Unmanned Aerial Vehicles (UAV)". in: *2025 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*.