Masih Beheshti

PhD Student and Graduate Research Associate

@ beheshti@asu.edu www.masihb.com Tempe, Arizona linkedin.com/in/masih-beheshti 0000-0001-5766-0024

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 Materials
- 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 Modeling:
  PTV Vissim | Synchro
- FEM Modeling:
  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

Internship

Foolad Technic International Engineering Company

July 2018 – August 2018 Esfahan, Iran

- Project Description: Designing an industrial shed

RESEARCH PROJECTS

Design Model for Reflection Cracking in Airport Asphalt Overlays of Rigid Pavements (Phase II)

PI: Dr. Hasan Ozer

2025 – Ongoing

- This project continues the work on development of a mechanistic-empirical design model for joint reflective cracking by enhancing the mechanistic framework and establishing transfer functions to implement field observation into the model's prediction. Sponsored by the Federal Aviation Administration (FAA).

Assessment of Pavement Mechanistic-Empirical (PaveMe) Design Software

PI: Dr. Hasan Ozer

2025 – Ongoing

- This project aims to examine recent and new ADOT construction projects and rehabilitation projects to verify the reliability, suitability, and acceptability of the results and recommendations provided by AASHTOWare Pavement ME Design 3.0 software for the performance of rigid and flexible pavements on Arizona's roads.

Near Real-time Construction Quality Monitoring and Inspection Protocols using Uncrewed Aerial Vehicle

PI: Dr. Hasan Ozer

2025 – Ongoing

- This project aims to enahnce the previously develoepd framework for quality control of asphalt pavement constructions by developing the survey protocols and tools to achieve near-real time anaylsis. This project is sponsored by National Center for Infrastructure Transformation (NCIT).

Assessing the Consumption Costs of Motor Vehicles on Arizona Roads

PI: Dr. Tejo Bheemasetti

2024 – Ongoing

- This project aims to assess the consumption costs of various vehicles on Arizona's roads and bridges to inform the development of alternative fee structures. This project focuses on the impact of different vehicle classes. The goal is to provide accurate consumption cost calculations to help close revenue gaps and improve infrastructure planning. This project is sponsored by the Arizona Department of Transportation (ADOT).

Automated Construction Quality Monitoring and Inspection Protocols using Unmanned Aerial Vehicles

PI: Dr. Hasan Ozer

2023 – 2025

- Development of protocols with the use of UAVs to provide a ubiquitous platform that can be used as an aid to monitor mat temperatures over wide paving areas and identify various temperature non-uniformity patterns, such as thermally segregated areas. This project is sponsored by National Center for Infrastructure Transformation (NCIT).

RESEARCH INTERESTS

- Pavement Numerical Modeling
- Airport Pavement Design
- Fracture Mechanics
- Statistical Analysis
- Life Cycle Assessment

VOLUNTEER EXPERIENCE

Graduate Student Government (GSG) Research Grant Reviewer
2025-Ongoing

Member of APSE Verification & Validation Task Force
2024-Ongoing

Task Force 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 (Second Language) ●●●●●

REFERENCES

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

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

PI: Dr. Hasan Ozer

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 widespread cracking. This project is sponsored by the Southwest Pavement Technology Consortium.

Reflective Cracking Model for Airport Asphalt Overlay Design

PI: 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.

PUBLICATIONS AND CONFERENCE PROCEEDINGS

Journal Articles

- 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: `https://doi.org/10.1177/03611981251355528`.
- Rahman, N., Castro, S., Beheshti, M., Vedula, N.V., Noorvand, H., Ozer H. (2025). "Development of a Cyclic Fracture Experiment for Characterization of High-Performance Asphalt Concrete Mixes". In: *Construction and Building Materials*. DOI: `https://doi.org/10.1016/j.conbuildmat.2025.142716`.
- Vedula, N., Beheshti, M., Madasu, S., and Ozer, H. (2025). "Automated framework for evaluating asphalt pavement construction using UAV imagery". In: *Automation in Construction*. DOI: `https://doi.org/10.1016/j.autcon.2025.106498`.
- 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: `https://doi.org/10.1177/03611981251356510`.
- Beheshti M., Castro, S., Vedula, 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`.
- 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`.
- 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

- [Poster Session] Beheshti, M., Bento, M., Ozer, H., Duarte, A. (2026). "A Computationally Efficient Approach for Analyzing Aircraft Load-Induced Reflective Cracking". In: *2026 Annual TRB Conference, Washington, D.C, US*.
- [Poster Session] Liu, F., Beheshti, M., Al-Qadi, I., Ozer, H. (2026). "Machine Learning-Based Predicted Stress Intensity Factor to Estimate Reflective Cracking in Airfield Asphalt Concrete Overlay Under Aircraft Loading". In: *2026 Annual TRB Conference, Washington, D.C, US*.
- [Poster Session] Zahid, A., Beheshti, M., Elmagri, H., Ozer, H. (2026). "Field Aging Kinetics of Asphalt Binders in Hot Climate Pavements: A Combined Chemical and Rheological Evaluation of Surface Coating Effects". In: *2026 Annual TRB Conference, Washington, D.C, US*.
- [Podium Session] 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: *2025 Annual TRB Conference, Washington, D.C, US*.
- [Podium Session] Liu, F., Al-Qadi, I.L., Beheshti, M., Ozer H. (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. (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., Ozer H. (2025). “Reflective Cracking Model for Airport Asphalt Overlay Design”. In: *2025 AAPT Annual Meeting, Reno, Nevada, US*.
- [Poster Session] Vedula, N., Beheshti, M., Ozer H. (2025). “Thermal Segregation and Compaction Quality Analysis of Asphalt Pavements using Unmanned Aerial Vehicles (UAV)”. in: *2025 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*.
- [Poster Session] Liu, F., Beheshti, M., Ozer H., Al-Qadi, I.L. (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. (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. (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., Eravathri, S.S., Salim, R., Ozer, H. (2023). “Analysis of the Effect of Thermal Loading on Reflective Cracking in Asphalt Overlaid Jointed Concrete Airfield”. In: *ASCE TDI International Conference on Transportation and Development, Austin, TX, US*.
- [Poster Session] Beheshti, M., Bento, M., Ramos, C.S., Ozer, H., Duarte, C.A., Brill, D.R. (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. (2023). “Climatic and Traffic Factors on Pavement Deterioration Trends and Mechanisms in Asphalt Concrete Overlays in Airfield Pavements”. In: *ASCE TDI International Conference on Transportation and Development, Austin, TX, US*.
- [Poster Session] Castro, S., Rahman, N., Al Rawahi, M., Beheshti, M., Ozer, H. (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*.