Masih Beheshti

PhD Student and Graduate Research Associate

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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"

ACHIEVEMENTS

Paper Reviewer for 2023 International Road Federation (IRF) Conference
IRF, 2023

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

Internship

Foolad Technic International Engineering Company

July 2018 – August 2018 Esfahan, Iran

- Project Description: Designing an industrial shed

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

Hasan Ozer
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Arizona State University

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

Imad L. Al-Qadi
@ alqadi@illinois.edu
University of Illinois Urbana-Champaign

PUBLICATIONS AND CONFERENCE PROCEEDINGS

Journal Articles

- 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.
- Beheshti, M., 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.
- 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/10.1016/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, 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*.