

Md Hasibul Hasan

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Academic Background

PhD in Environmental Engineering , University of Central Florida <i>Thesis: Smart Urban Air Pollution Management Using Crowdsourced Big Data, Low Cost Sensor Network and Aerial Remote Sensing</i> Advisor: Dr. Haofei Yu	August 2020 – Present
M.S. in Environmental Engineering , University of Central Florida	August 2020 – May 2023
B.S. in Civil Engineering , Bangladesh University of Engineering & Technology	July 2014 – November 2018

Professional Experience

Graduate Research Assistant UCF Air Quality Research Lab University of Central Florida	May 2021 - August 2021 May 2022 - April 2023 August 2023 - August 2024
Graduate Teaching Assistant Department of Civil, Environmental, and Construction Engineering University of Central Florida	May 2023 - July 2023 August 2024 - Present

Research Projects

1. **Developing Ozone Contingency Plan for Central Florida Region**, Funded by MetroPlan Orlando
2. **A Secure, Trustworthy, and Reliable Air Quality Monitoring System for Smart and Connected Communities**, Funded by National Science Foundation (NSF)
3. **Updating the Carbon COFL 2012 Program**, Funded by Florida Department of Transportation (FDOT)
4. **A Comparative Analysis of Alternative Fuel Fleet of Buses to Enhance Mobility in Central Florida**, Funded by Florida Department of Transportation (FDOT)
5. **Using a Digital Twin Approach for Designing and Evaluating Landfill Gas Emissions Modeling and Monitoring**, Funded by Hinkley Center for Solids and Hazardous Waste Management
6. **Impact of a Proposed Coal Fire Power Plant Across UCF**, Course Project UCF, Spring 2021
7. **Traffic Impact on CO Emission near N Alafaya E Colonial Intersection in Orlando**, Course Project UCF, Spring 2021

Selected Journal Articles

1. **Hasan, M. H.**, Zhang, P., Chen, J., Shi, G., Abichou, T., & Yu, H. (2025). Exploring uncertainties in the integrated mass enhancement method for remote sensing retrievals of methane emissions. *Waste Management*, 200, 114759.
2. Yu, H., **Hasan, M. H.**, Ji, Y., & Ivey, C. E. (2025). A brief review of methods for determining time-activity patterns in California. *Journal of the Air & Waste Management Association*, (just-accepted).
3. **Hasan, M. H.**, Yu, H., Ivey, C., Pillarisetti, A., Yuan, Z., Do, K., & Li, Y. (2023). Unexpected Performance Improvements of Nitrogen Dioxide and Ozone Sensors by Including Carbon Monoxide Sensor Signal. *ACS Omega*, 8(6), 5917-5924.

4. **Hasan, M. H.** (2023). Performance Comparison of Low-Cost Sensors Across Six Cities of Continental United States.
5. Xiang, K., Yu, H., Du, H., **Hasan, M. H.**, Wei, S., & Xiang, X. (2023). Exploring influential factors of CO₂ emissions in China's cities using machine learning techniques. *Environmental Science and Pollution Research*, 1-16.
6. Al Islam, M., & **Hasan, M. H.** (2020). Generation of IDF equation from catchment delineation using GIS. *Civil Engineering Journal*, 6(3), 540-547.

Conference Proceedings

1. **Hasan, M. H.**, Yu, H. (2021). "Performance Comparison of Low-Cost Sensors across Six Cities of Continental United States", Presented at the 20th annual CMAS Conference, North Carolina, 2021 and 2nd annual Center for Aerosol Science and Technology (CAST) workshop, Florida 2024.
2. **Hasan, M. H.**, Yu, H. (2022). "Improving Mobile Source Emission Estimation using Big Data Analytics", Presented at the 21st annual CMAS Conference, North Carolina, 2022, and UF Air Quality Workshop, Florida 2022.
3. **Hasan, M. H.**, Yu, H. (2024). "Spatial Performance Variation of Optical Particle Counter in Orlando", Presented at the 4th Annual Air Sensor International Conference, California, 2024, 2nd annual Center for Aerosol Science and Technology (CAST) workshop, Florida 2024 and UF AEESP Air Quality Workshop, Florida 2024.
4. Yu, H., **Hasan, M. H.** (2024). "The Smart and Trustworthy AIR quality (STAIR) Network: Practical Challenges and Lessons Learned", Presented at the 4th Annual Air Sensor International Conference, California, 2024.
5. Yu, H., **Hasan, M. H.** (2024). "Exploring the Impact of Atmospheric Conditions on the Accuracy of Integrated Mass Enhancement Satellite Retrieval Methods", Presented at the UF AEESP Air Quality Workshop, Florida 2024.

Peer Review Activities

Environment, Development, and Sustainability - Springer

2023

Teaching Experience (Guest Lecturer and GTA at UCF)

1. ENV 6128 - Smart Air Quality Monitoring and Air Pollution Control (Fall 2022, Fall 2024)
2. ENV 6106 - Theory and Practice of Atmospheric Dispersion Modeling (Spring 2023)
3. ENV 4120 - Air Pollution and Hazardous Waste Control (Fall 2021, Fall 2022, Fall 2023)
4. ENV 3001 - Introduction to Environmental Engineering (Fall 2023, Spring 2024)
5. EGN 3310 - Engineering Analysis: Statics (Summer 2023, Fall 2024, Spring 2025)
6. EGN 3331C - Mechanics of Materials Laboratory (Summer 2025)

Software Experience

1. Photochemical Models (CMAQ and WRF)
2. Emission Models (MOVES, SMOKE and AFLEET)
3. Dispersion Models (AERMOD and CAL3QHC)
4. Programming (Python, MATLAB, R and Fortran)
5. Statistical Data Analysis (JMP, SAS and HeidiSQL)
6. Mapping (ArcGIS and Origin)

Awards and Honors

ORCGS Doctoral Fellowship , University of Central Florida	2020
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Licenses and Certifications

SAS Data Mining Graduate Certificate , University of Central Florida	Fall 2023
Engineer In Training (EIT) , Maryland Department of Labor	Summer 2024