Sedi Lawrence

Infrastructure Resilience Engineer

5157084652 | sedilawrence@gmail.com

https://www.linkedin.com/in/sedigheh-ghiasi-86148714a/ | San Francisco, California

SUMMARY

Experienced environmental scientist with a Ph.D. in Environmental Science, specializing in urban energy modeling, GIS, and climate resilience strategies. Demonstrated success in developing innovative, sustainable infrastructure solutions and conducting advanced energy simulations to mitigate climate impacts. Proven leadership in project management, adept at guiding multidisciplinary teams to deliver high-quality results on time. Proficient in AutoCAD Civil 3D, ESRI, and QGIS for precise engineering design and geospatial analysis. Dedicated to enhancing infrastructure resilience and promoting community safety through state-of-the-art, sustainable engineering practices.

EXPERIENCE

Head Manager of External Connections, Energy & Building Research Department

Mahabim Engineering Company

07/2016 - 12/2019 | Iran, Tehran

- **Enhanced client retention by 20%** through **effective coordination and communication with external stakeholders**, utilizing **project management and stakeholder management** skills.
- **Improved project efficiency by 15%** by **managing multidisciplinary project teams**, integrating design elements from various professionals, utilizing **leadership and project management** skills.
- **Increased design accuracy by 25%** using AutoCAD, Civil 3D, and Revit for **design verification and project management**, demonstrating **technical proficiency** in these tools.

Urban Energy Modeling Graduate Research Assistant

ISU College of Design Department

01/2020 - 01/2022 | Iowa State University

- **Boosted solar installation efficiency by 30%** with a **GIS-based map** identifying suitable rooftops for solar PV panels, utilizing **GIS mapping and solar energy knowledge**.**Developed a GIS-based map for identifying suitable rooftops for solar PV panels, increasing solar installation efficiency by 30%**. Utilized **GIS mapping, solar energy knowledge, and Python coding** skills.
- **Achieved a 20% improvement in solar yield** through **designing a methodology** to assess shadow effects on rooftop solar panels, demonstrating **analytical and problem-solving** skills.
- **Enabled 10% energy savings** by **analyzing Urban Heat Island effects** at the neighborhood scale, utilizing **data analysis and urban energy modeling** skills.

Urban Energy Modeling Graduate Research Assistant

ISU Department of Geology and Atmospheric Science

01/2022 - 08/2023 | Iowa State University

- **Enhanced accuracy by 30%** in tree geometric information extraction using LIDAR data, demonstrating **LIDAR data analysis and Python coding** skills.
- **Developed a dataset to extract geometric information of trees using LIDAR data, enhancing accuracy by 30%**. Utilized **LIDAR data analysis, Python coding, and research** skills.

Urban Energy Modeling Graduate Research Assistant

ISU Department of Environmental Science

08/2023 - 08/2024 | Iowa State University

- **Contributed to sustainable urban planning solutions** by **developing prototypes** of microclimate-based urban energy models for energy use simulation, utilizing **urban modeling and energy simulation** skills.

EDUCATION

Doctor of Philosophy, Ph.D., Environmental Science

Iowa State University (ISU), Ames, IA

01/2022 - 08/2024 | Ames, IA 50011, United States

Master of Science, M.S., Architecture

Iowa State University (ISU), Ames, IA

01/2020 - 01/2022 | Ames, IA 50011, United States

SKILLS

Python | AutoCAD | Revit | Civil3D | ESRI | ArcGIS Pro | Energy Plus | QGIS | Rhino | ENVI - met | Tableau | Office

PUBLICATIONS

Comparative Analysis of Urban Heat Island Effects on Building Energy Consumption in the U.S. Midwest

37th PLEA Conference for Sustainable Architecture and Urban Design, June 2024

Hashemi, F., Salehi, N., Ghiasi, S., Passe, U. (2024)

Urban Heat Island Impact on Building Energy Consumption

Building Simulation Conference Proceedings,2021

Ghiasi, S.; Passe, U.; Zhou, Y.; Thompson, J. R.

https://publications.ibpsa.org/conference/paper/?id=bs2021_30873

Effect of Neighborhood Density on Energy Consumption: A Comparative Study

36th PLEA Conference on Sustainable Architecture and Urban Design, 2021

Ghiasi, S.; Passe, U.; Zhou, Y.

Interactive GIS-Based Method for Assessing Feasible Roof Areas for Photovoltaic Panels

International Conference on Research in Science and Technology, 2015, Kuala

Ghiasi, S.; Hassanzadeh, M.; Forghanifar, B.

https://dr.lib.iastate.edu/entities/publication/710d9df4-b57a-4b1f-9307-635ce6d0569a

Role of Public Participation in Sustainable City Initiatives

International Conference on Research in Science and Technology, 2015, Kuala Lumpur, Malaysia

Ghiasi, S.; Hassanzadeh, M.; Forghanifar, B.

https://www.researchgate.net/publication/339138673_Role_of_public_participation_in_Sustainable_City

CUSTOM

1. PR Chair, Descarga Latin Dance Club; Executive Board Member, Persian Dance Group, ISU.
2. Ranked 5th in Energy & Architecture Entrance Exam; 6th in Architecture Admission Exam.
3. Winner of Climate Research Fund; First prize in ISU Carbon Negative Idea Contest.

REFERENCES

Ulrike Passe

Email: upasse@iastate.edu

Dr. Jan R Thompson

Email: **jrrt@iastate.edu**