Mohamed Saeid Eid

Assistant Professor

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EDUCATION

The University of Tennessee, Knoxville

Ph.D., Civil and Environmental Engineering (GPA 4.0/4.0) May 2017

Dissertation title: "*Sustainable Infrastructure Development: A Holistic System Based Decision Making Tool Integrating Vulnerability Indicators and Stakeholders Objectives*"

Arab Academy for Science, Technology, and Maritime (Cairo, Egypt)

M.S. in Construction Engineering and Management (GPA 3.92/4.0) December 2012

Thesis title: "*Multi-Objective Non-Unit Based Repetitive Activities Scheduling using Genetic Algorithms*"

B.S. in Construction Engineering and Management (GPA 3.81/4.0) July 2008

RESEARCH EXPERIENCE

Assistant Professor (AASTMT) August 2017- Present

- Conducting research on site layout and facilities location selection in linear infrastructure projects using Uniform Cost Tree Search.
- Defining optimal governmental policies to incentivize mid-range investors to construct community-centric facilities using game theory.
- Developing a game theoretical model to evaluate driving behavior in Cairo, Egypt, and predicting optimal deterrence policies.
- Driving fair share in revenue/risk share in Construction Joint Ventures via cooperative game theory.
- Modeling production rates for construction crews via Bayesian Networks and System Dynamics to accurately predict the activities' durations.

Graduate Research Assistant

Advisor: Prof. Islam El-adaway (UTK) August 2013 – May 2017

- Conducted research on optimal sustainable infrastructure development utilizing Agent Based Modeling through integrating vulnerability indicators into stakeholders' objective functions.
- Carried out research on disaster recovery optimal strategies utilizing an Agent Based Model to assimilate the different associated stakeholders' preferences and needs.
- Developed an evolutionary stable post-disaster insurance profile utilizing Evolutionary Game Theory.
- Supported research on the bidding strategies and the effect of the Winner's Curse utilizing Auction Game Theory and simulating the different player's actions and learning behaviors.

- Researched the impact of the dynamic human behavior on the power generation and distribution in Tennessee utilizing Agent Based Modeling from an economic perspective.

Through the aforementioned research, I assisted in multiple grant writings to different funding programs within the National Science Foundation.

Advisor: Prof. Emad Elbeltagi (AAST, Cairo, Egypt) September 2009 – December 2012

- Conducted research on repetitive activities projects scheduling
- Utilized Genetic Algorithms and Pareto Front Sorting to determine an optimal set of schedules that meets the different repetitive activities projects' criteria.

HONORS AND AWARDS

- Editor's Choice Journal of Infrastructure Systems, ASCE, September (2018)
- Best Peer Reviewed Paper Award - Journal of Management in Engineering, ASCE (2017)
- Outstanding Graduate Student - CEE UTK (2017)
- Award of Excellence by Dean of College of Engineering – AAST (2012)

PEER REVIEWED PUBLICATIONS

Under Review and Working Papers

1. El-adaway, I., Sims C., **Eid, M.,** Liu, Y. (Under Review). "Understanding the Impact of Distributed Engergy Generation: An Agent-Based Computational Economics Approach" Journal of Infrastructure Systems, ASCE.
2. **Eid, M.**, and Soltan, A. (Working Paper) "Investigating Traffic Behaviour and Optimal Deterrence Policies: Game Theory Approach"
3. Maher, S., and **Eid, M**. (Working Paper) "Game Theory Model for Incentivizing Investors in Public Projects"

Published Journal Papers

1. **Eid, M.,** Elbeltagi, E., and El-adaway, I. (2018). "Multi-Objective Scheduling for Linear Construction Projects with Repetitive Activities". *Int. J. of Project Management*
2. **Eid, M.,** and El-adaway, I. (2018). "A Decision-Making Framework for Holistic Sustainable Disaster Recovery". *J. Infrastructure Systems*.
3. El-adaway, H., Abotaleb, I, **Eid, M.**, May, S., Netherton, L., Vest, J. (2018). "Contract Administration Guidelines for Public Infrastructure Projects in the United States and Saudi Arabia: A Comparative Analysis Approach" J. Construction Engineering and Management
4. **Eid, M.,** and El-adaway, I. (2017). "Integrating the Social Vulnerability of Host Communities and the Objective Functions of Associated Stakeholders during Disaster Recovery Processes Using Agent-Based Modeling" *J. Computing in Civil Eng.*
5. **Eid, M.,** and El-adaway, I (2016). "Sustainable Disaster Recovery Decision Making Support tool: Integrating Economic Vulnerability into the Objective Functions of the Associated Stakeholders". *J. of Management in Engineering American Society of Civil Engineers, 10.1061/(ASCE)ME.1943-5479.0000487 , 04016041.*
6. **Eid, M.,** El-adaway, I. (2016). "Sustainable Disaster Recovery: Multi-Agent Based Model for Integrating Environmental Vulnerability into Decision Making Processes of the Associated

Stakeholders," *J. Urban Planning and Development., American Society of Civil Engineers, 10.1061/(ASCE)UP.1943-5444.0000349 , 04016022.*

7. **Eid, M.,** El-adaway, I., and Coatney, K. (2015). "Evolutionary Stable Strategy for Postdisaster Insurance: Game Theory Approach." *J. Manage. Eng.*, 10.1061/(ASCE)ME.1943-5479.0000357, 04015005:1-9.
8. Ahmed, M., El-adaway, I., Coatney, K., and **Eid, M.** (2015). "Construction Bidding and the Winner's Curse: Game Theory Approach." *J. Constr. Eng. Manage.* , 10.1061/(ASCE)CO.1943-7862.0001058 , 04015076:1-9.

Conference Proceedings

1. Mansour, A., **Eid, M**., and Elbeltagi, E. (Accepted). "Optimal Site Location for Temporary Facilities in Linear Infrastructure Projects", International Conference on Computing in Civil Engineering, 2019, ASCE.
2. Eid, M., Elbeltagi, E., and El-adaway, I. (Accepted). "Multi-Objective Simultaneous Optimization for Linear Projects Scheduling", International Conference on Computing in Civil Engineering, 2019, ASCE.
3. **Eid, M**., and El-adaway, I. (2018) "Decreasing the Economic Vulnerability of the Built Environment throughout the Disaster Recovery Processes: An Agent Based Model Framework" *Construction Research Congress 2018,* pp. 492-502
4. El-adaway, I., Abotaleb, I., **Eid, M.**, May, S., Netherton, L., and Vest, J. (2018) "Contracting in the Saudi Public Constriction Projects: What do U.S. Contractors Need to Know?" *Construction Research Congress 2018*, pp. 239-249
5. **Eid, M.**, and El-adaway, I. (2016) "Sustainable Infrastructure Development through Integrating the Stakeholders Preferences and Host Community's Environmental Vulnerability" *Construction Research Congress 2016:* pp. 1658-1668.
6. **Eid, M.**, El-adaway, I., and Coatney, Kalyn (2016) "Developing a Post Disaster Insurance Profile using Evolutionary Game Theory" *Construction Research Congress 2016*: pp. 1486-1496.
7. Ahmed, M. H., El-adaway, I., Coatney, K., & **Eid, M.** (2016). "Understanding Multi-Stage Bidding Adverse Selection for Construction Contracts using Game Theory" *Construction Research Congress 2016*: pp. 2160-2170.
8. **Eid, M.** and El-Adaway, I. (2015) Optimizing Disaster Recovery Strategies Using Agent-Based Simulation. *International Workshop on Computing in Civil Engineering 2015*: pp. 379-386.
9. **Eid, M.,** El-adaway, I., and Coatney, Kylan. (2015). Evolutionary Stable Strategy for Post-Disaster Insurance: A Game Theory Approach. "*5th International Construction Speciality Conference, Vancouver, B.C. 2015".*
10. Ahmed, M. H., El-adaway, I., Coatney, K., & **Eid, M.** (2015). Multi-stage bidding for construction contracts: a game theory approach. "*5th International Construction Speciality Conference, Vancouver, B.C. 2015".*
11. Boz, M., El-Adaway, I., and **Eid, M.** (2014) A Systems Approach for Sustainability Assessment of Civil Infrastructure Projects. *Construction Research Congress 2014: pp. 444-453.*

12. Labarre, P., El-Adaway, I., and **Eid, M.** (2014) The Potential of Construction Project Benchmarking in the Vicksburg District of the U.S. Army Corps of Engineers. *Construction Research Congress 2014: pp. 1626-1635.*

PRESENTATIONS

Conferences

1. "Decreasing the Economic Vulnerability of the Built Environment throughout the Disaster Recovery Processes: An Agent Based Model Framework" *Construction Research Congress 2018.*
2. "Understanding Multistage Bidding Adverse Selection for Construction Contracts Using Game Theory". *Construction Research Congress 2016.*
3. "Developing a Post Disaster Insurance Profile using Evolutionary Game Theory". *Construction Research Congress 2016*.
4. "Sustainable Disaster Recovery through Integrating the Stakeholders Preferences and Host Community's Environmental Vulnerability". *Construction Research Congress 2016*.
5. "Optimizing Disaster Recovery Strategies using Agent Based Simulation" *International Workshop on Computing in Civil Engineering 2015*.
6. "A Systems Approach for Sustainability Assessment of Civil Infrastructure Projects". *Construction Research Congress 2014*
7. *"*The Potential of Construction Project Benchmarking in the Vicksburg District of the U.S. Army Corps of Engineers". *Construction Research Congress 2014*
8. "U.S. Economic Indicators and Stock Prices of Construction Equipment Manufactures" A Statistical Relationship Analysis. *Construction Research Congress 2014*
9. "Time At Large within the Common Law Legal System: Application to Standard Forms of Contract". *Construction Research Congress 2014*
10. "Biddability, Constructability, Operability, and Environmental Checklist: Potential Role in Reducing Conflicts, Claims, and Disputes". *Construction Research Congress 2014*

Invited Talks

1. Department of Agriculture Economics, Mississippi State University, April 2015. "Evolutionary game theory and stable strategies and application in the insurance industry".
2. Department of Civil and Environmental Engineering, University of Tennessee, October 2016. "Sustainable disaster recovery through environmental vulnerability reduction and broad community involvement."
3. Department of Civil, Environmental, and Infrastructure Engineering, George Mason University, April 2017. "Framework for Holistic Sustainable Disaster Recovery: Integrating Vulnerability Indicators into the Objective Functions of the Stakeholders".

ACADEMIC SERVICES

Reviewer, Journal of Management in Engineering, ASCE.
Reviewer, International Journal of Construction Management, Taylor and Francis.
Reviewer, Engineering Science and Technology, an International Journal. Elsevier B.V.
Reviewer, Journal of Sustainability, MDPI, Switzerland.
Reviewer, Journal of Environments, MDPI, Switzerland.

Reviewer, Construction Research Congress, March, 8th – March 10th, 2020, Tempe, Arizona
Reviewer, International Conference on Computing in Civil Engineering, 2019, Atlanta, Georgia
Reviewer, Construction Research Congress, May, 31st –June, 2nd, 2016 San Juan, Puerto Rico
Reviewer, Construction Research Congress, May, 19th –May, 21st, 2014 Atlanta, Georgia

TEACHING EXPERIENCE

Certified Associate of the Center for the Integration of Research, Teaching and Learning (CIRTL), 2016.

Arab Academy for Science, Tech. and Maritime (Cairo, Egypt) August 2017-Present
Assistant Professor

Undergrad Courses
- Project Management
- Introduction to Construction Management
- Construction Project Management I
- Construction Project Management II
- System Analysis for Construction Engineers

Postgrad Courses
- Advanced System Analysis

The University of Tennessee, Knoxville August 2014-2017
Graduate Teaching Assistant

Undergrad Courses
- Construction Engineering and Management I
- Construction Engineering and Management II
- Structural Mechanics

Postgrad Courses
- Analysis and Mitigation of Construction Conflicts, Claims and Disputes

Mississippi State University August 2013- May 2014
Graduate Teaching Assistant

- Project Management
- Construction Contracts and Law

Arab Academy for Science, Tech. and Maritime (Cairo, Egypt) September 2008-June 2013
Graduate Teaching Assistant

- Construction Methods and Equipment I
- Construction Methods and Equipment II
- Construction Management I
- Construction Management II
- Special Topics in Construction Engineering
- Techniques of Planning and Scheduling

- System Analysis for Construction Engineers
- Construction Surveying
- Construction Contracts and Law
- Quantity Takeoff and Cost Estimation
- Building Construction
- Quality Control in Construction Engineering
- Architecture Drawing

MENTORSHIP EXPERIENCE

- 2017-Present Supervising Master of Science Students at the AAST
- 2017-Present Guiding and mentoring senior students in their graduation project in both construction and traffic engineering disciplines
- 2015-2017Training new graduate students (UTK) on the different programming language, the uses of Object Oriented Programming, and the complexities of the different algorithms.
- 2011-2012 Mentoring multi-disciplinary undergraduate students (Water Resources, Highway, Railway, Coastal, and Construction Engineering) through a one-year graduation project in AAST, Cairo, Egypt. The project resulted in "The Analysis of the Development Corridor in Western Desert, Egypt".

INDUSTRY EXPERIENCE

Trading and Contracting Group (Egypt)

Full time site engineer May 2003-May 2008

Part time engineer and project management June 2008- July 2013

Overseeing the construction of the following Resorts' Spas and Wellness Centers

- JW Marriot, Cairo
- Sofitel Al-Gazirah, Cairo
- Steigenberger, Hurghada

Part time operation supervisor and procurement August 2017- Present

Supervising the contracted work and maintaining the supply chain

EXTRACURRICULAR ACTIVITIES

- Faculty Advisor for Alpha Builders – AAST (2018-Present)
- Active Member of AAST-Astronomy Club (2017-Present)
- Co-founded the Egyptian Student Association (E.S.A.) at the University of Tennessee (2016)
- President of the E.S.A.-UTK (2016-2017)

SKILLS

- Programming Languages: Java, C++, C, and VB
- Mathematical and Statistical Analysis Packages: Matlab, SAS, SPSS, JMP, and R
- Computer Aid Design: AutoCAD
- Geographic Information System: ArcMap
- Construction Planning and Scheduling: Primavera P6 and P3.1, and MS Project
- Others: MS Office, and Latex