Curriculum Vita

Burchan Aydin, Ph.D.
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Academic Ranking: Associate Professor, Department Head
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EDUCATION

- Ph.D. Industrial Engineering, Texas Tech University, 2014.
- M.A.A. Organizational Development, University of the Incarnate Word, 2008.
- B.S. Industrial Engineering, Middle East Technical University, 2005

TEACHING EXPERIENCE

- 2021 – Present: Associate Professor, Engineering and Technology, Texas A&M University, Commerce
- 2015 - 2021: Assistant Professor, Engineering and Technology, Texas A&M University, Commerce
- Jan- June 2015: Adjunct Faculty, Engineering and Technology, Texas A&M University, Commerce.
- 2010-2014: Teaching and Research Assistant, Construction Engineering, Texas Tech University
- Jan-Aug 2010: Research Assistant, Industrial Engineering, Texas Tech University.
- Jan-May 2009: Teaching Assistant, Industrial Engineering, Texas Tech University

RESEARCH GRANTS AND AWARDS

Research Keywords: Unmanned Air Vehicles, Drones, Sustainability, Engineering Education

Grants Received:

- Advisor for Stahl Endowment funded Student Workers, 2022-Present
- 'First Responder Search and Rescue Challenge 3.1' Stage 1 winners,
    - Unmanned Air Systems and Artificial Intelligence for Search and Rescue of Lost Persons in Thick Forested Areas
    - Funding Source: National Institute of Standards and Technology (NIST)
    - Funding Amount $7,000
- 'Teachers Take Flight' Drone Workshop for Dallas ISD's 25 STEM teachers
    - Funding Amount : $25,000

- Principal Investigator for
    - Unmanned Air Systems Assisted Fire Fighting
    - Funding Source: TEES, Texas A&M Engineering Experiment Station.
    - Funding Amount $2,500, 2017-2018 Fiscal year
- Principal Investigator for
    - Live Swarm Remote Sensing of Unmanned Air Vehicles
    - Funding Source: TEES, Texas A&M Engineering Experiment Station.
    - Funding Amount $2,500, 2018-2019 Fiscal year
- Spring 2017 Faculty Development Grant, A&M Commerce.
  Award: $300
- Received Presidential GAR Initiative grant to hire a Graduate Research Assistant for Fall 2019, and Spring 2020
- Received Presidential GAR Initiative grant to hire a Graduate Research Assistant for Fall 2020, Spring 2021, and Summer 2021
- Student Worker Grant through Stahl Endowment for Drone Research since Fall 2021

Other Grant Work

- TxDoT, 2023, Developing a Performance-Based Concrete Overlay Mix Design for Improved Resistance to Early-Age Cracking and Increased Durability, 2023, Co-PI, declined.
- Weed Science, 2024. Identification and Precision Management of Invasive Shrubs via UAV and AI. Co-PI, declined.
- National Science Foundation, 2024. MRI: Track 1 Acquisition of 3D CONCRETE PRINTING ROBOT CELL for research and education in STEM fields at a primarily undergraduate institution. Co-PI.
- Texas Division of Emergency Management, 2022. Computer Vision for 'Reburn' Detection in 'Smoldering Fire' Areas and Fire Suppression System with UASs Equipped with Balloons. PI, declined.
- National Science Foundation, 2022. REU Site: Summer Research Program for Community College Students in AI-enabled Autonomous Ground and Aerial Vehicle Applications at Texas A&M University-Commerce. Co-PI, declined.
- DOC-National Institute of Standards and Technology, 2020. Unmanned Aerial System and Artificial Intelligence for Spotfire (Ember Cast Ignitions) Management in Wildland Urban Interface Zones. PI, declined.
- DOC-National Institute of Standards and Technology, 2018. Unmanned Air Systems-Assisted Wildfire Firefighting in Wildland Urban Interface Zones. PI, declined.

PUBLICATIONS

- Aydin, B. Selvi, E., Sari, H. Identifying Potential Failure Modes in Hydraulic Systems of Construction Machinery Using the FMEA Method, A Case Study. Accepted, IISE 2025 Conference.
- **Aydin, B**., Farris, N. (2023). Safety Risks and Challenges Faced by Commercial Female Drone Pilots. In Proceedings of Association of Technology Management and Applied Engineering Conference ATMAE 2023.
- Selvi, E., **Aydin, B**., Aponte, S., Sanchez, D. D. (2023). Design of a Drone System to use Fire Extinguishing Balls. IISE 2023 Conference Proceedings.
- **Aydin, B., & Singha, S. (2023).** Drone Detection Using YOLOv5**.** *Eng*, *4*(1), 416-433**.**
- **Aydin, B.** (2022). Emerging Firefighting Robotics Technology. In Proceedings of Association of Technology Management and Applied Engineering Conference ATMAE 2023.
- Singha, S. **Aydin, B**. (2021). Automated Drone Detection Using YOLOv4. *Drones* **2021**, 5, 95. https://doi.org/10.3390/drones5030095

- Kim, S.; **Aydin, B**.; Kim, S. Simulation Modeling of a Photovoltaic-Green Roof System for Energy Cost Reduction of a Building: Texas Case Study. *Energies* **2021**, *14*, 5443. https://doi.org/10.3390/en14175443
- Hunter, H., **Aydin, B**. (2020). Knowledge, Attitude, and Practice of Emerging Technology in the Construction Sector: A Survey Study. IISE 2020 Conference Proceedings.
- Jaeheum Yeon, Burchan **Aydin**, Ilseok Eddie Oh, Sojung Kim, and Julian Kang, "Three Dimensional Big-Screen Construction Project Models for Construction Engineering Students: Challenges and Opportunities", Associated Schools of Construction (ASC) International Conference, Liverpool, UK, April 15-18, 2020
- **Aydin, B**. (2019). Public acceptance of drones: Knowledge, attitudes, and practice. *Technology in Society, 59,* 101180.
- **Aydin, B**., Selvi, E., Tao, J., & Starek, M. (2019). Use of Fire-Extinguishing Balls for a Conceptual System of Drone-Assisted Wildfire Fighting. *Drones 3*(1), pp. 17, doi:10.3390/drones3010017.
- **Aydin, B**., Yeon, J., Oh, E. (2019). Drones in Construction Sector: Knowledge, Attitudes, and Practice, a Pilot Survey Study. IISE Annual Conference Proceedings. Institute of Industrial and Systems Engineers.
- **Aydin, B**., Kim, S., Harp, D., & Ojemuyiwa, S. (2018, May). Designing an Automated Green Roof System. In IIE Annual Conference Proceedings. Institute of Industrial and Systems Engineers.
- Darwish, M., **Aydin, B**., Basora, Z. (2016). Approaches to Teaching Sustainable Development and Green Construction: Guest Experts & Fieldtrips. American Society for Engineering Education, GSW 2016.
- **Aydin, B**., Darwish, M. M., & Selvi, E. (2016). The State-Of-The-Art Matrix Analysis for Usability of Learning Management Systems. *The ASEE Computers in Education (CoED) Journal*, *7*(4), 48.
- **Aydin, B**., & Moler, P. (2016). Cost Analysis of Open Source versus Proprietary Learning Management Systems. Proceedings of the International Conference of Technology Management (ICTM).
- **Aydin, B.** (2014). Development of a Decision Tool for Cost Justification of Usability. Dissertation. Texas Tech University.
- **Aydin, B**. & Beruvides M. G. (2014). Development of a Decision Tool for Cost Justification of Usability. *International Journal of Information Technology and Business Management*, Vol. 28, pp 45 - 73.
- **Aydin, B**., Beruvides, M. G. (2014). Development of a Decision Tool for Usability Cost Justification. Proceedings of the 2014 Industrial and Systems Engineering Research Conference.
- **Aydin, B**., Palikhe, H. and Beruvides, M. G. The Impact of Usability on the Cost of Quality. American Society of Engineering Management 2012 International Annual Conference Proceedings, Virginia Beach, VA, 2012.
- **Aydin, B**., Millet, B., and Beruvides, M. G. The State-Of-The-Art Matrix Analysis for Cost-Justification of Usability Research. American Society of Engineering Management 2011 International Annual Conference Proceedings, Lubbock, TX, 2011.
- Millet, B., and **Aydin, B**. Empirical Evaluation of Text Entry Performance of the Apple iPhone and a Hard-key Mini QWERTY Keyboard Smartphone. International Society for Occupational Ergonomics, ISOES 2010 Annual Conference Proceedings, Tempe, AZ, 2010.

Abstracts, Presentations and Workshops:

- Davis, J. Aydin, B., Moler, P (2024). Development of a Fast Track BS-MS Technology Management Program, ATMAE Conference, 2024.
- Aydin, B., Mete. M (2024). Use of Drones for Hot Spot Detection and Control Post Wild Fires, ATMAE Conference, 2024.
- Speaker: Drone Rules and Regulations, Agriculture Conference, East Texas A&M, 2024.
- Aydin, B. and Kashmir World Foundation (2018). Teachers Take Flight' Drone Workshop for Dallas ISD's 25 STEM teachers

- Aydin, B. (2016). Sustainability Analysis for an Emerging Technology: Drones. Presentation at Association of Technology Management and Applied Engineering (ATMAE) Conference.
- Organized Drone Programming Workshop as part of the Adventures in Mathematics Event at A&M-Commerce in 2019, and 2020.
- Organized a workshop titled: 'Introduction to drones for middle school students and building drones from LEGOs', as part of the Engineering STEM Summer Camp at A&M-Commerce, June 2017
- Organized a Workshop titled: 'Drone Programming Basics for STEM teachers and students', at STEAM WORKSHOP, 2017 at Mesquite Center:
- Darwish, M., Basora, Z., & Aydin, B. (2017). Preparing the Construction Industry for Climate Change through Resilience and Adaptation. Abstract. International Sustainable Buildings Symposium ISBS 2017.

Mentored Student Research

- **Title**: An Assistant to Firefighting: Drone Design
    - Student Poster Presentation at National Conference on Undergraduate Research (NCUR 2017)
    - Authors: Nicole Buczkowski, Christian Carter, Harrison Clark, Kyle Crews, Michelle Espinal, and Julie Summers (Jacksonville University)
    - Faculty Mentors: Emre Selvi (Jacksonville University, Engineering Department) and Burchan Aydin (Texas A&M University - Commerce, Department of Engineering and Technology)
- **Title**: A Comprehensive Analysis on Fire Extinguishing Supplementary Tools
    - International Conference of Industrial Engineering and Technology Management (IC-IETM 2017) (Sub-division: Safety)
    - Authors: 2 IE majors, and 2 MS TMGT students Engineering and Technology, Texas A&M University - Commerce
    - Faculty Mentor: Burchan Aydin
- **Title**: "Knowledge, Attitude, and Practice of Emerging Technologies in Construction Sector**.**"
    - Student Poster Presentation at Pathway Research Symposium, 2019
    - Honors Student: Hunter Hammontree
    - Faculty Mentor: Burchan Aydin
- **Title:** "A Multiple Regression Analysis Study Examining the Price of Drones**.**"
    - Student Poster Presentation at Pathway Research Symposium, 2019
    - Graduate Research Assistant: Subrato Singha
    - Faculty Mentor: Burchan Aydin
- **Title:** "Optimal Facility Layout Design for Sustainable and Continuous Beer Production"
    - Advisor for Honors thesis of Industrial Engineering Undergraduate student Mina Kim
- **Title:** "An Examination of the Impact of Recruitment Strategies on Student Enrollment in an Online Master's in Biological Sciences"
    - Dissertation Committee Member for Shaine Marsden
- **Title:** "Gaze based Mind Wandering Detection Using Deep Learning"
    - Committee member of Subroto Singha for MS Computational Sciences thesis

Creative Scholarly Research Based Activities:

- **Chair** of International Conference of Industrial Engineering and Technology Management (2017- to present) http://edusolutions.org
    - 2017, Dallas
    - 2018, New York
    - 2019, San Antonio
- **Co-Chair** of International Sustainable Buildings Symposium (ISBS, 2019, Dallas, TX) http://www.isbs2019.gazi.edu.tr/
- **International Executive Board** for International Sustainable Buildings Symposium-ISBS 2015, 2016, 2017, 2018

- **Program Committee Member** for FEMIB 2020 to present, International Conference on Finance, Economics, Management, And IT Business http://www.femib.scitevents.org/
- **Reviewer** for the following academic journals:
    - Sustainability MDPI,
    - Remote Sensing MDPI,
    - Energies MDPI
    - Technology Forecasting and Social Change, EVISE
    - IEEE Transactions on Human-Machine Systems
- **Reviewer** for the following conference proceedings:
    - American Society for Engineering Education (ASEE) Annual Conference Proceedings
    - Association of Technology Management and Applied Engineering (ATMAE) Conferences Abstracts
    - Institute of Industrial and Systems Engineering (IISE) Conference Proceedings
    - FEMIB
- **Judge** for
    - Annual Federation Graduate Student Research Symposium in Denton, Texas on Friday, March 31, 2017.
    - Annual Federations Research Symposium Judge, 04/09/2021
    - Annual Research Symposium (ARS), Texas A&M University-Commerce, April 9, 2019.
- **Founded the Drone Development Laboratory at A&M-Commerce, 2017**
- **Advisor Committee Member** for EagleRay Fixed-wing Drone by Kashmir World Foundation

PROFESSIONAL TRAININGS AND WORKSHOPS

- Professional License:
    - United States Department of Transportation, Federal Aviation Administration F.A.A., REMOTE PILOT for Small Unmanned Air Systems
        - Certificate Number: 4061218
        - Date of Issue: Oct 14, 2017, renewed on 2019, and 2021
- Certifications:
    - FAA's The Recreational UAS Safety Test (TRUST) Completion Certificate, Chippewa Valley Technical College, 11/16/2021
    - Six Sigma Green Belt Certificate, Six Sigma Global Institute, 2019
    - Completion of Teachers Take Flight Workshop
        - "DaVinci Challenge: Build a Drone for Education"
        - Location: Foxcroft School, Middleburg, Virginia
        - Date: August 2017
    - Completion of Webinar:
        - "Drones on Campus: Policies to Achieve Institutional Compliance and Minimize Risk"
        - Organizer: paperclip communications

HONORS AND PROFESSIONAL MEMBERSHIPS

- **Dr. Augustine "Chuck" Arize Junior Faculty Award,** by The University's Chapter of Texas Association of Black Personnel in Higher Education in conjunction with the Faculty Senate Academic Practices Committee. 2018
- Faculty Senate Recognition **Award for Professional Excellence: "Fearless Investigation"** 2017, Texas A&M University - Commerce
- Member, Alpha-Pi-Mu - The Industrial Engineering Honor Society.

- Member, Tau-Beta-Pi - The Engineering Honor Society.