Dr. Zehra Canan Araci

Ph.D. in Lean Product Development
Assistant Professor
Industrial Engineering and Engineering Management
University of Sharjah

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EDUCATION

2014 – 2017	**PhD: Lean Product and Process Development** Cranfield University, UK
2012 – 2013	**MSc: Industrial Engineering and Operations Management** University of Nottingham, UK
2004 – 2008	**BSc: Industrial Engineering** Dumlupinar University, Turkey

CAREER HISTORY

2020 – Present	**Assistant Professor:** Industrial Engineering and Engineering Management University of Sharjah, Sharjah, UAE
2019 – 2020	**Assistant Professor:** Quality and Business Excellence Abu Dhabi School of Management, Abu Dhabi, UAE
2018 Spring & Summer	**Adjunct Faculty:** Quality and Business Excellence Abu Dhabi School of Management, Abu Dhabi, UAE
2018 Spring	**Adjunct Faculty:** College of Engineering Abu Dhabi University, Abu Dhabi, UAE
2017 – 2018	**Research Consultant:** Operational Excellence Al-Zahra Private Hospital, Dubai, UAE
2014 – 2017	**Researcher (PhD):** Lean Product Development Cranfield University, UK
2009 – 2012	**Specialist: Quality Management Systems** Sigma Center Management Systems, Bursa, Turkey
2008 – 2009	**Project Engineer** Mutlusan Mould and Die, Bursa, Turkey

RESEARCH PROJECTS

2025 – Present Research Supervisor, Dubai Police Forensic Engineering Department, UAE, Developing an Optimized Workflow for Converting Motion Videos into 3D Models.

2022 Research Supervisor, Dubai Police Forensic Engineering Department, UAE, Lean Six Sigma Based Machine Learning Application in Forensic Engineering.

2016 Project Leader, Caltec Limited, UK, Lean Development of a Jet Pump for Oil and Gas Industry.

2015 Research Team Member, Rolls-Royce Plc, UK, CONGA-Configuration Optimisation of Next Generation Aircraft.

2014 Project Leader, Paxton Access Ltd, UK, Lean Development of a Vandalism-Resistant Electronic Card-Reader.

COURSES TAUGHT (BSc)

- Management for Engineers
- Maintenance Planning and Control
- Lean Production Systems
- Sustainable Product Development
- Introduction to Industrial Engineering and Engineering Management + Lab

COURSES TAUGHT (MSc)

- Strategic Management and Principles
- Quality Management Systems and Approaches
- Quality Improvement Tools and Techniques
- Quality Engineering
- Achieving Business Excellence
- Business Excellence Awards and Frameworks
- Creative Problem Solving
- Case Study Analysis and Research Skills
- Statistical Process Control
- Lean Manufacturing
- Knowledge Acquisition and Creation
- Knowledge system design
- Strategic Knowledge Management
- Lean Six Sigma Systems
- Management for Engineers
- Operations Management
- MSc Seminar

COURSES TAUGHT (PhD) (CO-TEACHING)

- Research Methods
- Lean product development
- Research Methodology
- Systematic literature review
- Searching the suitable journal for the research paper publications and identifying the right journal paper with high impact factors.
- Designing poster to exhibit research results.

THESIS SUPERVISION (MSc)

- Investigating the Synergy between Industry 4.0 Technologies and Lean Tools and Their Impact on the Lean Wastes Reduction (ongoing)
- Developing a Critical Success Factors Framework for Lean implementation in the UAE government (ongoing)

- Development of a Digital Transformation Readiness Model through PESTEL Analysis to Assess the Digital Readiness of Construction Companies in the UAE (ongoing)
- The Impact of Using Digital Technologies within Course Content on the Study Duration in Engineering Programs (ongoing)
- Assessing Different Types of Controlled Environment Agriculture Systems through AHP Analysis (ongoing)
- Investigating the Implementation of Digital Twin in Predictive Maintenance for Bus Fleet in the United Arab Emirates (ongoing)
- Evaluating the Effects of Online and Hybrid Teaching Practices on the Academic Performance of Students in Higher Education Institutes (May 2025)
- Comparison of Online, Hybrid, and Face-to-Face Course Delivery Methods from a Student's Perspective (December 2024)
- Lean Six Sigma Based Machine Learning Application in Forensic Engineering: A Case Study (June 2023)
- Using Big Data Analytics for Improving the Process of Generating Official Statistics through DMAIC Methodology (December 2022)

THESIS SUPERVISION (PhD)

- Developing a Total Sustainability Management Framework: Towards the Adoption of Whole Institutions Approach for Organizations (ongoing)
- The Production-Protection Balance in High-Technology Organizations, and the Role of Stakeholders (ongoing)
- A study on digital transformation and its critical success factors for public organizations: Developing a comprehensive framework (June 2026)
- Developing a framework to assess critical factors in innovation capabilities and their impact on Small-Medium Enterprises (SMEs) performance (December 2025)

PUBLICATIONS

Journal papers (peer-reviewed):

1. **Araci, Z.C.**, (under-review). A conceptual synthesis of state-of-the-art literature on lean digital transformation frameworks, *Sustainable Futures*.
2. Alkindi, S., **Araci, Z.C.,** Bouridane, A., Piya, S., Alqassim, M.A., and Alzarooni, S. (in-process). Embedding machine learning in the Improve phase of DMAIC: a Lean Six Sigma framework for material failure classification in forensic engineering.
3. Aydin, R., AlBaiti, S.H., Cheaitou, A., **Araci, Z.C**., Haridy, S., Shamsuzzaman, M., Alsyouf, I. (2026). Sustainability-Driven Quantitative Models in Closed-loop Supply Chains with Remanufacturing: A Systematic Review. *Journal of Remanufacturing*. 16 (3), 14. https://doi.org/10.1007/s13243-026-00171-4
4. Bahada, A., **Araci, Z.C**., & Al Ali, R. (2026). Application of DMAIC to save energy from Governmental Buildings: A Case Study in the UAE. *Journal of Facilities Management*. Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/JFM-10-2024-0131
5. **Araci**, **Z.C.,** Aydin, R., Alsyouf, I., Obaideen, K. and Al Jaberi, B.H. (2026). Enhancing sustainability in higher education institutions through sustainability circles approach: a UAE case study, *International Journal of Sustainability in Higher Education*, 27(3), pp. 693-713. https://doi.org/10.1108/IJSHE-08-2024-0557.

6. Al Maazmi, **Araci, Z. C**. A., & Piya, S., (2026). Critical success factors for digital transformation in government organizations using a structural model approach. *Discover Applied Sciences 8(1), 66*. https://doi.org/10.1007/s42452-025-07967-2.
7. Almansoori, S. I., **Araci, Z. C.**, & Dweiri, F. (2026). An AI-Driven Machine Learning Approach to Evaluating the Impact of Innovation Dynamics on SME Performance in the UAE. *Management Systems in Production Engineering*, 34(1), pp. 103-110.
8. Haridy, S., Aydin, R., Omar, A., **Araci, Z.**, Shamsuzzaman, M., & Maged, A. (2025). Sustainability-driven optimization of np chart for enhanced process monitoring. *Cleaner Engineering and Technology*, 26, 100962. https://doi.org/10.1016/j.clet.2024.100962
9. Almansoori, S. I., **Araci, Z. C.**, & Dweiri, F. (2025). A structural equation modeling approach to evaluating innovation dynamics' effect on SME performance in the United Arab Emirates. *Discover Applied Sciences, 7*, Article 357. https://doi.org/10.1007/s42452-025-06865-x.
10. Al Maazmi, A., Piya, S., & **Araci, Z. C.** (2024). Exploring the critical success factors influencing the outcome of digital transformation initiatives in government organizations. *Systems, 12*(12), 524. https://doi.org/10.3390/systems12120524
11. Al-Shihabi, S., Aydin, R., **Araci, Z.C.**, Dweiri, F., Obeidat, M. and Al Bataineh, M. F. (2024) Abolishing Single-Use Plastic Water Bottles in Dubai Hotels as a Voluntary Act—Scenarios and Environmental Impacts, *Sustainability* 2024, 16(8), 3121.
12. Bashir, H., **Araci, Z.C.**, Obeideen, K., and Alsyouf, I. (2023) An approach for analyzing and visualizing the relationships among key performance indicators for creating sustainable campuses in higher education institutions, *Environmental and Sustainability Indicators*, 19 (2023).
13. **Araci, Z.C.**, Al-Ashaab, A., Garcia Almeida, C., McGavin, J. (2022) Physics-based Trade-off Curves to Develop a Control Access Product in Set-based Concurrent Engineering Environment, *International Journal of Lean Six Sigma,* 13(4), pp. 824-846, ISSN: 2040-4166.
14. Al-Ashaab, **A., Araci**, Z.C., Mohd Maulana, M.I.I., Garcia Almeida, and Young, S. (2021). Set-Based Concurrent Engineering: A process model and case study validation, *WSEAS Transactions on Computers*, 20, 2021, pp. 329-351, DOI:10.37394/23205.2021.20.36.
15. **Araci, Z.C.**, Al-Ashaab, A., Tariq, M.U. and Braasch J.H. (2021). Synthesizing Knowledge for Lean Product Development Process of a Low Noise Jet Engine. *International Journal of Aerospace System Science and Engineering*, 1 (1), pp. 3-19. https://doi.org/10.1504/ijasse.2020.10031916
16. **Araci, Z.C.**, Al-Ashaab, A., Tariq, M.U., Braasch, J.H. and Simsekler, E.M.C. (2020). Creating knowledge environment during lean product development process of jet engine. *International Journal of Advanced Computer Science and Applications*, 11 (5), pp. 58-62.
17. Tariq, M.U, Khan, S. and **Araci, Z.C**. (2020). Self-directed Learning through YouTube: Challenges, Opportunities, and Trends in the United Arab Emirates. *International Journal of Mechanical and Production Engineering Research and Development*, 10 (3), pp. 1949-1966. ISSN (P): 2249-6890; ISSN (E): 2249-8001.
18. Iglesia, A., Al-Qassimi, M., Abouali, S., Alqarni, N., Mazouni, B., Waboi, A., **Araci, Z. C**. and Al-Ashaab, A. (2017). Developing a healthcare knowledge-based framework to enhance the productivity of the operations of private hospitals. *International Journal of Systems Applications, Engineering & Development*, 11 (2017), pp: 270-276. ISSN: 2074-1308.

19. **Araci, Z.C.**, Al-Ashaab, A., and Maksimovic, M. (2016). Knowledge Creation and Visualisation by Using Trade-off Curves to Enable Set-based Concurrent Engineering. *Electronic Journal of Knowledge Management*, v.14 (1), p. 75-88. ISSN 1479-4411.

Conference Papers (peer-reviewed):

1. **Araci, Z. C.**, Alsharif, A.A., Kabour, N.S, Dablan, G.A., Almaazmi, A., Al Ali, A., Al Ali, M., and Alqasim, M.A. (under-review). A Multi-Criteria Decision Framework for Selecting Video-to-3D Reconstruction Software in Forensic Engineering. The 53rd International Conference on Computers and Industrial Engineering (CIE53), 20-23 October 2026, Khalifa University, Abu Dhabi, UAE.
2. Ghanim, F.I. and **Araci, Z. C.** (under-review). The Impact of Using Digital Technologies within Course Content on the Study Duration in Engineering Programs. The 53rd International Conference on Computers and Industrial Engineering (CIE53), 20-23 October 2026, Khalifa University, Abu Dhabi, UAE.
3. Al Ali, S. and **Araci, Z. C.** (in-press). Investigating the Implementation of Digital Twin in Predictive Maintenance for Bus Fleet in the United Arab Emirates. *In the Proceedings of International Conference on Artificial Intelligence, Machine Learning and Big Data Engineering.* By The International Society for Engineering and Technical Education (ISETE). Kuala Lumpur,Malaysia - 19th December 2025.
4. Alshehhi, K. and **Araci, Z.C.** (in-press). *Investigating the Challenges in Implementing Lean 4.0 to Reduce Unnecessary Processes in Government Organizations*. 2nd International Innovation X.0 Forum (IIF-2025). University of Sharjah, Sharjah, UAE, April 9-10, 2025.
5. Alnaqbi, R. and **Araci, Z.C**. (2026). Investigating the Synergy between Industry 4.0 Technologies, Lean Tools, and Lean Wastes. *6th International Conference on Innovative Research in Applied Science, Engineering and Technology (IRASET)*, FEZ, Morocco, 2026, pp. 1-6, 10.1109/IRASET68627.2026.11538758.
6. Khader, Z. B. and **Araci, Z.C.** (2026). *Student Perspective-Oriented Comparison between Online, Hybrid, and Face-to-Face Course Delivery Methods*. AIP conference Proceedings, 3406(1), 020056, International Computer Sciences and Informatics Conference, Amman Arab University, Jordan, November 12-13, 2024, https://www.icsic.aau.edu.jo/program.html
7. Alkhajeh, S. T., Al Shamsi, F. S., Al-Jumaili, Q. A., **Araci, Z. C.**, Alqasim, M. A., & Alzarooni, S. M. (2024). Investigating the challenges of the forensic engineering case reporting processes: Dubai Police case study. In *Proceedings of the 2024 IEEE International Conference on Technology Management, Operations and Decisions (ICTMOD 2024)*. IEEE. Sharjah, UAE, 4-6 November 2024, https://doi.org/10.1109/ICTMOD63116.2024.10878166.
8. Al-Jumaili, Q. A., Al Shamsi, F. S., Alkhajeh, S. T., **Araci, Z. C**., Alqasim, M. A., & Alzarooni, S. M. (2024). Machine learning-driven predictive analytics in workload distribution for forensic engineering case reporting process: Dubai Police case study. In *Proceedings of the 2024 IEEE International Conference on Technology Management, Operations and Decisions (ICTMOD 2024)*. IEEE. Sharjah, UAE, 4-6 November 2024, https://doi.org/10.1109/ICTMOD63116.2024.10878251.
9. Alnaqbi, S. K., & **Araci, Z. C.** (2024). Case study: Identifying comparison criteria for AHP analysis of controlled environment agriculture systems. In *Proceedings of the 2024 IEEE International Conference on Technology Management, Operations and Decisions (ICTMOD 2024)*. IEEE. Sharjah, UAE, 4-6 November 2024, https://doi.org/10.1109/ICTMOD63116.2024.10878135.

10. Alkindi, S.A., **Araci, Z.C**., Alqassim, M.A., and Bouridane, A. (2024) *Integration of Machine Learning Tools with Lean Six Sigma Activities in Forensic Engineering: A Literature Review*, Proceedings of International Conference on Quality Engineering and Management (ICQEM), (pp. 132-147), Girona, Spain, 13-14 June 2024, ISBN 978-989-54911-2-4.
11. Omar, A., **Araci, Z.C**., Shamsuzzaman, M., Aydin, R., Haridy, and Bashir, H. (2024) *An np chart for reducing sustainability cost of monitoring manufacturing processes*, Proceedings of International Conference on Quality Engineering and Management (ICQEM), (pp. 69-78) Girona, Spain, 13-14 June 2024, ISBN 978-989-54911-2-4.
12. Alhosani, A., **Araci, Z.C**., and Bahada, A.M.F. (2023) *Improving the Office Layout for Employee Productivity Using Six Sigma DMAIC Methodology*, Proceedings of International Conference on Computers and Industrial Engineering, CIE, Volume 1, Pages 553-563. The 50th International Conference on Computers and Industrial Engineering: Sustainable Digital Transformation, Sharjah, UAE | October 30–November 2, 2023.
13. Ayham, M. and **Araci, Z.C.** (2022) *The Effects of Online and Hybrid Teaching Practices on the Academic Performance of Engineering Students in Higher Education Institutions*, Proceedings of the 5th European International Conference on Industrial Engineering and Operations Management (IEOM), pp. 2466-2477, Rome, Italy, July 26-28, 2022, https://doi.org/10.46254/EU05.20220477.
14. Al Jaghoub, F., **Araci, Z.C.**, Semeraro, C. (2022) *Key Research Challenges of Incorporating Official Statistics with Big Data Analytics and Lean Six Sigma*, Proceedings of the 5th European International Conference on Industrial Engineering and Operations Management (IEOM), pp. 3196-3205, Rome, Italy, July 26-28, 2022, https://doi.org/10.46254/EU05.20220232.
15. Alyaarbi A, Atatreh S, Alsereidi A, Alblooshi N, Almaazmi S, Jayaraman R, Simsekler MCE, **Araci ZC**, Ellahham S. (2020) *Evaluation of Variability in Clinical Assessments*. Proceedings of the 8th International Conference on Industrial Engineering and Operations Management (IEOM), Dubai, UAE, March 10-12, 2020.
16. **Araci, Z.C**., Al-Ashaab, A., Lasisz, P.W., Flisiak, J.W., Mohd Maulana, M.I.I., Beg, N., Rehman,A. (2017). *Trade-off Curves Applications to Support Set-Based Design of a Surface Jet Pump*. 27th CIRP Design Conference, 10-12 May 2017, Cranfield, UK, Procedia CIRP, 60 (2017), pp. 356-361. https://doi.org/10.1016/j.procir.2017.01.028.
17. Mohd Maulana, M.I.I., Al-Ashaab, A., Flisiak, J.W., **Araci, Z.C**., Lasisz, P.W., Shehab, E., Beg, N., Rehman, A. (2017). *The set-based concurrent engineering application: a process of identifying the potential benefits in the surface jet pump case study*. 27th CIRP Design Conference, 10-12 May 2017, Cranfield, UK, Procedia CIRP, 60 (2017), pp. 350-355. https://doi.org/10.1016/j.procir.2017.01.026.
18. Iglesia, A., Al-Qassimi, M., Abouali, S., Alqarni, N., Mazouni, B., Waboi, A., Araci, Z.C., Al-Ashaab, A. (2017). Developing a healthcare knowledge-based framework to enhance the productivity of the operations of private hospitals,
19. **Araci, Z. C.**, Al-Ashaab, A., & Garcia, C. (2016). *Enabling Set-based Concurrent Engineering via Physics-based Trade-off Curves*. WSEAS Transactions on Business and Economics, 13, 620–626.
20. Mohd Maulana, M. I. I., Flisiak, J. W., Al-Ashaab, A., **Araci, Z. C.**, Lasisz, P. W., Beg, N., & Rehman, A. (2016). *The Application of Set-Based Concurrent Engineering to Enhance the Design Performance of Surface Jet Pump*. WSEAS Transactions on Business and Economics, 634–643.

21. **Araci, Z.C.**, Al-Ashaab, A., Maksimovic, M. (2015). *A Process of Generating Trade-off Curves to Enable Set-based Concurrent Engineering*. Proceedings of the 16th European Conference on Knowledge Management (ECKM2015), 3-4 September 2015, Udine, Italy, p. 37-46.

Reports, Magazine Articles, and Others:

1. **Araci, Z.C.** (2017). Knowledge creation and visualisation by using trade-off curves to enable set-based concurrent engineering applications, PhD Thesis, Cranfield University, Cranfield, UK.
2. Al-Ashaab, A., Golob, M., Oyekan, J., **Araci, Z. C**., Khan, M., Deli, D., and Al-Ali, E., (2014). Flying into aerospace's next generation. *Industrial Engineer Magazine*. V. 46, N. 10, p.38-43.
3. **Araci, Z.C**. (2014). *Knowledge visualisation using trade-off curves to enable SBCE*. 4th LeanPPD Industrial Workshop, 28 October 2014, Cranfield, UK, p. 97-110.
4. **Araci, Z**.C. (2013). The Extent of Supplier and Customer Involvement in New Product Innovation. MSc Dissertation, University of Nottingham, Nottingham, UK.

EVENTS / ACTIVITIES / SEMINARS (ORGANIZED / CO-ORGANIZED)

1. **Senior Design Project Exhibition 2023**, University of Sharjah, College of Engineering, UAE.
2. **Senior Design Project Exhibition 2022**, University of Sharjah, College of Engineering, UAE.
3. **Industrial seminar**, Cranfield University, UK, 3rd Industrial Lean Product and Process Development (LeanPPD).
4. **Closed debate**, Rolls-Royce Bristol, UK, 1st Lean Product and Process Development LeanPPD.
5. **Training** 3 days, Cranfield University, UK, Lean Product Development.
6. **Training** 2 days, Stockholm, Sweden, Lean Product Development.
7. **Seminar**, GE aviation Cheltenham, UK, Lean Product Development.
8. **Seminar** and final project presentation, Paxton in Brighton, Lean Product Development.

AWARDS

2025	First Prize in the Students Senior Design Project Competition, Industrial Engineering and Engineering Management Department Level, University of Sharjah Project Title: Developing an Electric Vehicle Parking Reservation System and Application: University of Sharjah Case Study
2025	Third Prize in the Students Senior Design Project Competition, Industrial Engineering and Engineering Management Department Level, University of Sharjah Project Title: Developing an Industry 4.0-Driven Parking Enforcement System
2011-2017	Full Scholarship awarded by Turkish Ministry of Education in order to perform English and postgraduate studies in the UK (covers tuition, stipend and all related expenses).
2000-2004	Scholarship awarded by Istanbul Dershanesi, a private course to prepare students for the national university exams, in order to achieve successful placement in high-rank universities (covers tuition fees 100%).
1999-2000	Scholarship awarded by Istanbul Dershanesi, a private course to prepare students for the national high-school exams, in order to achieve successful placement in high-rank schools (covers tuition fees 80%).

PROFESSIONAL/TECHNICAL TRAINING:

1. ISO 9001:2008 Quality Management Systems Informing and Documentation,

2. ISO 9001:2008 Quality Management Systems Internal Auditor,
3. OHSAS 18001 Occupational health and safety management systems,
4. Problem Solving Techniques,
5. Lean Manufacturing – 5S, VSM (Value Stream Mapping), SMED (Single Minute Exchange of Dies),
6. Supply Chain Management and Logistics,
7. Six Sigma Green Belt,
8. KAIZEN,
9. TPM (Total Productive Maintenance),
10. Ce Marking
11. TS ISO/IEC 27001 Information Security Management systems.
12. Python (AI) Programming Language
13. Solidworks

Languages: Turkish (native), English (fluent).