Amit J Lopes, Ph.D.
Assistant Professor
Department of Industrial Manufacturing and Systems Engineering
Director, Smart Manufacturing Innovation Laboratory
The University of Texas at El Paso
El Paso, Texas 79968
Phone: (915) 747-5958
Email: ajlopes@utep.edu

EDUCATION

Ph.D.	The University of Texas at El Paso	Materials Science and Engineering	Dec 2010
M.S.	The University of Texas at El Paso	Industrial Engineering	Aug 2003
B.E.	The University of Mumbai, India	Production Engineering	June 2001

EXPERIENCE

The University of Texas at El Paso	Assistant Professor	Department of Industrial Manufacturing and Systems Engineering	Sep 2018 – Present
TMAC - Paso Del Norte	Regional Director	Research Institute for Manufacturing and Engineering Systems (RIMES)	Jul 2017 – Present
The University of Texas at El Paso	Research Assistant Professor	Research Institute for Manufacturing and Engineering Systems (RIMES)	Feb 2011 – Jun 2017

TEACHING ACTIVITIES (Average Teaching Evaluation Score: 4.6/5.0)

1. ***IE 3373 - Engineering Probability and Statistical Models***; Undergraduate level; Fall 2022, Spring 2022, Fall 2021, Spring 2021, Fall 2020, Spring 2020, Fall 2019, Spring 2019, Fall 2018.
2. ***SE 5344 - Systems Engineering – Integration Verification and Validation***; Graduate level; Summer 2020, Spring 2020, Summer 2019, Summer 2018, Fall 2017, Summer 2017, Spring 2017, Spring 2016, Fall 2015, Spring 2014, Fall 2013
3. ***MFG 5390 - Manufacturing Engineering Special Topics***; Graduate level; Fall 2020, Spring 2019, Fall 2015, Fall 2014
4. ***UNIV 1301 - Foundations of Engineering***; Undergraduate level; Fall 2019, Fall 2018, Fall 2017, Fall 2016, Fall 2015
5. ***MFG 5311 - Design for Manufacturability;*** Spring 2017, Spring 2016, Spring 2015, Spring 2014, Spring 2013
6. ***SE 5345 – Systems Engineering Project Practicum;*** *Summer 2013*

SPONSORED RESEARCH ACTIVITY

Proposals Submitted – Funded/Pending Notification

1. "Type 1: NSF Regional Innovation Engine", National Science Foundation, $120,000, 1/16/2023 – 1/15/2025, **PI (80%),** ***Pending Notification***

2. "CUE-M: Mobilizing Interdisciplinary Cybersecurity Culture in Early Undergraduate Education", National Science Foundation, **$999,667**, 4/1/2023 – 10/1/2024, **Co-PI (30%)**, ***Pending Notification***
3. "Texas Manufacturing Assistance Center - Paso del Norte", Department of Commerce - National Institute of Standards and Technology - University of Texas Arlington, **$367,229**, 7/1/2022-6/1/2023, **Co-PI (50%)**
4. "Sustainable Smart Technology Reduction", Environment Protection Agency – University of Texas Arlington, **$22,800**, 10/1/2022 - 9/30/2024, **PI (100%)**
5. "Texas Manufacturing Assistance Center - Paso del Norte", Department of Commerce - National Institute of Standards and Technology - University of Texas Arlington, **$277,229**, 7/1/2021-6/1/2022, **Co-PI (50%)**
6. "Pandemic Response Support for Regional Economic Development", US EDA Scaling Pandemic Resilience Through Innovation and Technology (SPRINT) Product and Supplier Development Lab, Department of Commerce**, $225,000 (Federal),** 4/15/2021-4/30/2023, **PI (100%)**
7. "Smart Manufacturing for Small and Medium Manufacturers in a Predominantly Hispanic Workforce Region", Clean Energy Smart Manufacturing Innovation Institute (CESMII), Department of Energy, **$263,376 (Federal),** 2/1/2021 – 31/01/2022**, PI (40%)**
8. "E3 – Economy, Energy and Environment", Environment Protection Agency – University of Texas Arlington, **$24,000**, 10/1/2020-9/30/2022, **PI (100%)**
9. "Texas Manufacturing Assistance Center - Paso del Norte", Department of Commerce - National Institute of Standards and Technology - University of Texas Arlington, **$277,229**, 7/1/2020-6/1/2021, **Co-PI (50%)**
10. "Dashboards for Manufacturing Capabilities During Pandemic", US Department of Commerce – City of El Paso, **$55,000**, 6/15/2020-11/30/2020, **Co-PI (25%)**
11. "Covid-19 Personal Protective Equipment Supply Chain Development", US Department of Commerce - National Institute of Standards and Technology - University of Texas Arlington, **$163,747**, 6/15/2020-9/30/2021, **Co-PI**
12. "Advanced Manufacturing Technology Services – Smart Manufacturing", Department of Commerce - National Institute of Standards and Technology - University of Texas Arlington, **$150,000**, 4/1/2020-3/31/2022, **PI**
13. "Industrial Simulations and Project Management – Marvin Engineering", Lockheed Martin Corporation (LMC) Aeronautics, **$94,454**, 5/2/2019-3/31/20, **Co-PI (50%)**
14. "Texas Manufacturing Assistance Center - Paso del Norte", Department of Commerce - National Institute of Standards and Technology - University of Texas Arlington, **$300,000**, 7/1/2019-6/1/2020, **Co-PI (50%)**
15. "E3 – Economy, Energy and Environment", Environment Protection Agency – University of Texas Arlington, **$18,000**, 10/1/2018-9/30/2020, **PI (100%)**
16. "Texas Manufacturing Assistance Center - Paso del Norte", US Department of Commerce - National Institute of Standards and Technology - University of Texas Arlington, **$281,000**, 7/1/2018-6/1/2019, **Co-PI (50%)**
17. "New Manufacturing Technology Development and Implementation – Marvin Engineering", Lockheed Martin Corporation (LMC) Aeronautics, **$103,600**, 5/8/2018-3/31/19, **Co-PI (50%)**
18. "Workforce Training and Development – Training Within Industry", Illinois Manufacturing Excellence Center, 2018, **$9,000**, **PI (100%)**
19. "Warehousing Optimization - Gamma Aerospace", Lockheed Martin Corporation (LMC) Aeronautics, **$33,000**, 4/1/2018-3/31/19, **Co-PI (50%)**

Proposals Submitted – Not Funded

1. "Kihomac Inventory Management System", Lockheed Martin Aeronautics, **$9,502**, 10/1/2022 – 9/30/2023, **PI**
2. "Enabling 'Glocalization' and Power Equity Through Community DER Adoption", US Department of Energy, **$380,748**, 5/1/2022 – 4/30/2024, **Co-PI**

3. "FW-HTF-P: Enabling Cybersecurity Awareness in Future Industry 4.0 Workforce:, National Science Foundation, $150,000, 09/01/2022 – 8/31/2023, **Co-PI**
4. "Technology Roadmap to Advance Industry 4.0 and Digital Twin for Regional Economic Development and Planning with a Focus on Electric Vehicle Supply Chain", US Department of Commerce, **$299,993**, 10/1/2021 - 3/31/2023, **Co-PI**
5. "Producing Multi-Disciplinary Engineering Education to Drive Additive Manufacturing of Multi-Functional DoD Devices", Office of Naval Research, **$5,716,210**, 1/1/2020 – 12/31/2022, **Co-PI**
6. "ECR:PEER: Enhancing Workforce Development and STEM Education Through an Engaging Online Model Based Systems Engineering (MBSE) Curriculum", National Science Foundation, **$2,000,000**, 11/1/2019 – 10/31/2022, **Co-PI**
7. "MSIPP: Center for Extreme Materials Processing (CEMP)", National Nuclear Security Administration, **$3,000,000**, 9/1/2019 – 8/31/2022, **Co-PI**

SYNERGISTIC ACTIVITIES

Journal Reviewer: Additive Manufacturing Journal, Rapid Prototyping Journal, Journal of Materials Processing Technology, International Journal of Industrial Ergonomics
Conference Reviewer: Solid Freeform Fabrication Symposium, American Society for Engineering Education Conference, Institute of Industrial and Systems Engineering Conference
Certified in 'Teaching Online' by the Teaching Online Academy at Academic Technologies in UTEP

LIST OF PUBLICATIONS

Journal Articles

- **Lopes A.**, Rivas J., Taylor H., Orquiz, C., and Wicker R. (2022). Measurement systems analysis for Beam Compensation, Scaling factors and Geometric Dimensioning for a Metallic Additively Manufactured Test Artifact. CIRP Journal of Manufacturing Science and Technology, ***Submitted - Under Review***
- Akundi, A., Euresti, D., Luna, S., Ankobiah, W., **Lopes, A**., & Edinbarough, I. (2021). State of Industry 5.0—Analysis and Identification of Current Research Trends. *Applied Systems Innovation*. 5 (1), 27
- **Lopes, A**. J., Perez, M. A., Espalin, D., & Wicker, R. (2020). Comparison of ranking models to evaluate desktop 3D printers in a growing market. *Additive Manufacturing, 35*, 101291.
- **Lopes, A.**, Lee, I., MacDonald, E., Quintana, R., & Wicker, R. (2014). Laser curing of silver-based conductive inks for in situ 3D structural electronics fabrication in stereolithography. *Journal of Materials Processing Technology, 214* (9), 1935-1945.
- **Lopes, A.**, MacDonald, E., & Wicker, R. (2012). Integrating stereolithography and direct print technologies for 3D structural electronics fabrication. *Rapid Prototyping Journal*. 18 (2), 129–143
- Pennathur, A., **Lopes, A.**, & Contreras, L. (2003). Aerobic capacity of young Mexican American adults. *International Journal of Industrial Ergonomics*, 35 (1), 91–103.
- Rahman, M., Pan R., Ho, J., Tseng, T., & **Lopes, A.** (2022). A Review of Augmented Reality Technology and its Applications in Digital Manufacturing, ***Submitted - Under Review***
- **Lopes, A.**, Espalin, D., Vega, A., Dittberner, A., Petrovic, S. & Wicker, R. Cybernetic Design and Additive Manufacturing of Customized Circumaural Headsets with Integrated Signal Processing for Spectral Cue Preservation, ***Under development***
- **Lopes, A.**, Orquiz Muela, C., Marquez, C., Estupiñán López, F., Gaona Tiburcio, C., Almeraya Calderón, F., & Wicker, R. Oxidation Effects at High Temperature for Ti-6Al-4V Alloy Fabricated by Conventional and Electron Beam Additive Manufacturing. ***Under development***

Conference Proceedings

- **Lopes, A.**, Renteria Marquez, I., Rahman, F., Tseng, T., & Luna. S. (2022). Smart Manufacturing for Underserved Workforce Development. *2022 ASEE Annual Conference & Exposition*.

- Luna, S., **Lopes, A.**, Bahabry, A., & Akundi, A. (2022). Trends of Systems Engineering Job Postings and their Implications for Curriculum Development. *2022 ASEE Annual Conference & Exposition.*
- Rascon, A., Hossain, N., Kotteda, V., Harris, C., Janssen, H., Dudrey, E., Kumar, V., & **Lopes, A.** (2022). Designing an Experimental Setup for Analyzing the Flow Through a 3D Printed Venous Valve System From Arthroscopic Images. *Proceedings of the ASME 2022 Fluids Engineering Division Summer Meeting*.
- **Lopes A.**, Rivas J., Taylor H., Valles J., & Wicker R. (2022). Laser Powder Bed Fusion (LPBF) Artifact Evaluation Based on Standardized Geometric Dimensioning and Tolerancing (GD&T) Methods. *IISE Annual Conference and Expo 2022*
- Manzanares, C. & **Lopes, A.** (2022). Relationship Between Collaborative Robot Assembly and Quality. *IISE Annual Conference and Expo 2022*
- Madathil, C., Alfred, M., & **Lopes, A.** (2020). Patient Journey Mapping: A Literature Review. *Proceedings of the 2020 IISE Annual Conference.*
- Tseng, T., Rahman, M., Chiou, R., Renteria, I., Akundi, A., Senthilkumar, J., & **Lopes, A.** (2020). Embedding Computer Simulation Based Classroom Activities to Enhance the Learning Experience for Manufacturing Systems. *2020 ASEE Virtual Annual Conference and Exposition*
- **Lopes, A.**, Ramos, L., Saenz, D., Morton, P., Terrazas, C., Choudhuri, A., & Wicker, R. (2019). Analysis of Powder Removal Methods for EBM Manufactured Ti-6AL-4V Parts. *2019 Solid Freeform Fabrication Symposium Proceedings*
- Tseng, B., **Lopes, A.**, Huang, C., Chiou, R., Kim, H., & Akundi, A. (2017). SCARA Robot Parameter Evaluation for Embedding Structured Electronics Using Design of Experiments (DOE). *Proceedings of the 2017 Industrial and Systems Engineering Conference*
- Akundi, A. & **Lopes, A.** (2017). Maximizing STEM Relevance through Project-Based Learning for Freshman Engineers. *American Society for Engineering Education Conference*
- Pineda, R., **Lopes, A.**, Tseng, T., & Salcedo, O. (2012). Service Systems Engineering: Emerging Skills and Tools", *New Challenges in Systems Engineering and Architecting Conference on Systems Engineering Research (CSER), Procedia Computer Science*. 8, 420 – 427.
- Robinson, C., Stucker, B., Coperich Branch, K., Palmer, J., Strassner, B., Bugos, R., Navarrete, M., **Lopes, A.**, MacDonald, E., Medina, F., & Wicker, R. (2007). Fabrication of a Mini-SAR Antenna Array using Ultrasonic Consolidation and Direct Write. *2nd International Conference on Rapid Manufacturing*
- Navarrete, M., **Lopes, A.**, Acuna, J., Estrada, R., MacDonald, E., Palmer, J., & Wicker, R. (2007). Integrated Layered Manufacturing of a Novel Wireless Motion Sensor System with GPS. *18th Annual Solid Freeform Fabrication Symposium*
- **Lopes, A.**, Navarrete, M., Medina, F., Palmer, J.A., MacDonald, E., & Wicker, R. (2006). Expanding Rapid Prototyping for Electronic Systems Integration of Arbitrary Form. *17th Annual Solid Freeform Fabrication Symposium*
- De Nava, E., Navarrete, M., **Lopes, A.**, Alawneh, M., Contreras, M., Muse, D., Castillo, S., MacDonald, E., & Wicker, R. (2008). Three-Dimensional Off-Axis Component Placement and Routing for Electronics Integration using Solid Freeform Fabrication. 19*th Annual Solid Freeform Fabrication Symposium*
- Medina, F., **Lopes, A.**, Inamdar, A., Hennessey, R., Palmer, J., Chavez, B., & Wicker, R. (2005). Integrating Multiple Rapid Manufacturing Technologies for Developing Advanced Customized Functional Devices," *Rapid Prototyping & Manufacturing Conference, Rapid Prototyping Association of the Society of Manufacturing Engineers.*
- Medina, F., **Lopes, A.**, Inamdar, A., Hennessey, R., Palmer, J., Chavez, B., Davis, D., Yang, P., Gallegos, P.L., & Wicker, R. (2005). Hybrid Manufacturing: Integrating Direct Write and Stereolithography. *16th Annual Solid Freeform Fabrication Symposium*.
- **Lopes, A.**, Inamdar, A., Medina, F., Hennessey, R., Palmer, J., Chavez, B., Davis, D., Gallegos, P., and Wicker, R. (2005). Rapid Electromechanical Device Manufacturing using a Hybrid Direct Write

and Stereolithography System. *TexMEMS VII International Conference on Micro Electro Mechanical Systems*.

SELECT PRESENTATIONS:

- Presenter, Clean Energy Smart Manufacturing Innovation Institute (CESMII) – Education and Workforce Development Projects – Cross Pollination Workshop. "Smart Manufacturing for Small and Medium Manufacturers in a Predominantly Hispanic Workforce Region". February 2022
- Invited Speaker, Smart Manufacturing Summit - 2021, Panel Discussion: 12 Industry Leaders Sharing their Smart Manufacturing Insights. "Smart Manufacturing for Underserved Small and Medium Manufacturers". December 2021
- Webinar – 6° of Smart Manufacturing - Increasing the Smart Manufacturing Talent Pool and its Diversity. "Increasing Opportunities and Diversity in SM for SMMs". August 2021
- Invited Speaker, International Council on Systems Engineering (INCOSE) Enchantment Chapter Speaker Series Webinar, "Service Systems Engineering". November 2013
- "Hybrid Manufacturing: Integrating Direct Write and Stereolithography", at the *16th Annual Solid Freeform Fabrication Symposium*, University of Texas at Austin, 2005, Austin, TX, USA.

AWARDS AND HONORS

- STEM Accelerator Faculty Partner Award – 2016, 2017
- Received 'Outstanding Paper Award' by Rapid Prototyping Journal at the 2013 Literati Network Awards for Excellence for article entitled "Integrating stereolithography and direct print technologies for 3D structural electronics fabrication"
- Received 'Highly Commended Award' at the 2012 Emerald Engineering Outstanding Doctoral Research Awards in the 'Additive Manufacturing' category
- Dodson Dissertation Fellowship Award Recipient – 2009

CURRICLUM DEVELOPMENT

1. Led the development of a smart manufacturing curriculum by updating four existing courses to include smart manufacturing specific modules: MFG 5314 - Robotics and Flexible Automation; IE 5390 - Special Topics: Data Visualization; MFG 5312 - Strategic Design of Manufacturing Systems; and IE 5390 - Industrial Data Analytics
2. Got approval to offer the graduate certificate to our student starting Summer 2022

COLLABORATORS AND OTHER AFFILIATIONS

i) Collaborators

Dr. Sreenath Chalil Madathil, Binghamton University
Dr. Raul Fernandez, University of Texas at Arlington
Dr. Satya Akundi, University of Texas at Rio Grande Valley

ii) Graduate advisor

Dr. Ryan Wicker, (University of Texas at El Paso) (Ph.D. advisor)

iii) Graduate Research Assistants

Luis Ramos Castaneda, Andres Hernandez, Alan Guillen; Jesus Rivas Escarcega, Carlos Manzanares, Erick Rosales, Debapriya Banik, Raghu Bandlamudi, Priscila Balanzar, Asif Sharon, Shankar Perumal, Juan Gonzalez, Amit Kumar Saha

GRADUATE STUDENTS SUPERVISED

Graduate Students Completed

ADVISOR

Ph.D. Students

- Jesus Rivas Escarcega, "Development of a Geometric Dimensioning and Tolerancing (GD&T) Framework for Part Evaluation using Metal Additive Manufacturing Processes", Spring 2023 (Expected)

M.S. Students

- Luis Ramos, "Analysis of Powder Removal Methods for EBM TI-6AL-4V Parts", Graduated in Fall 2020
- Rene Dominguez, "Comfort Evaluation of a Customized Additively Manufactured Headset", Graduated in Summer 2022
- Carlos Manzanares, "Productivity and Quality Evaluation in Assembly using Collaborative Robots", Graduated in Fall 2022
- Amit Kumar Saha, "Simulation of Pizza Operations under Uncertain Supply Chain Scenarios", Fall 2022
- Priscila Balanzar, "Digital Manufacturing Applications in Biomedical Industry", Spring 2023 (Expected)
- Erick Rosales, "Industrial Internet of Things for Preventive Maintenance", Spring 2023 (Expected)
- Debapriya Banik, "Natural Language Mapping Application in Maternal Healthcare Outcomes", Spring 2023 (Expected)

CO-ADVISOR

M.S. Students

- Abhilash Aditya, "Optimization of Collagen Microneedle Using Taguchi Method", 2017
- Saurabh Nayyar, "Enhancing Surface Finish of Fused Deposition Modeling parts through Targeted Chemicals and Design of Experiments (DOE)", 2016
- Charith Boppana, "Design of Experiments-based SCARA Robot Parametric Evaluation for Embedding Electronics into 3D print", 2016
- Sai Dhiresh Kilari, "A Novel Approach to Control Corrosion Behavior On Bio Material Using Taguchi Method", 2016
- Oscar Murga, "Three-Dimensional Structural Electronics: Pick and Place", 2015

Graduate Students in Progress

Ph.D. Student

- Juan del Real Gonzalez

M.S. Students

- Asif Sharon
- Debapriya Banik
- Shankar Perumal

GRADUATE STUDENTS THESIS/DISSERTATION COMMITTEE MEMBER

- Jose Motta, 2018
- Alfonso Fernandez, 2018
- Eduardo Trejo, 2019
- Chuck Easttom, 2019
- Carlos Acosta, 2019
- Fernando Rodriguez, 2019

- Andres Navarro, 2019
- Scott Wilkins, 2020
- Nikki Martinez, 2020
- Emerson Armendariz, 2020
- Christopher Minjares, 2020
- Md Moinuddin Shuvo, 2020
- Kazi Md Masum Billah, 2021
- Jaime Varela, 2021
- Ahmad Abu-Issa, 2021
- Aldo Rubio, 2021
- Kurtis Watanabe, 2021
- Joshua Holguin, 2022
- Angel Vega, 2022
- Prajina Edayath, 2022
- Patrick Gutierrez, 2022
- David Sepulveda, 2022
- Juan Fernandez, 2022
- Joseph Lindley, 2022

SERVICE

- UTEP Faculty Senate – IMSE Department Representative
- Member - -College of Engineering Research Committee
- Undergraduate Curriculum Committee – IMSE Department First Alternate Representative
- University Faculty Marshal of Students – UTEP Spring Commencement 2022
- UTEP College of Engineering – Dean Search Committee Member Fall 2021
- IMSE Department Tenure Track Faculty Search – Fall 2019, Spring 2020, and Fall 2021
- Faculty Marshal of Students – UTEP Fall Commencement 2017
- IMSE Day Conference Organizing Committee – 2016-Present
- Workforce Solutions Borderplex – Economic Development Group
- Bi-national Technology Council Member
- Future of Work Committee Member