**Amit J Lopes, Ph.D.**

Assistant Professor

Department of Industrial Manufacturing and Systems Engineering

Director, Smart Manufacturing Innovation Laboratory

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**EDUCATION**

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| **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**

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| --- | --- | --- | --- |
| 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. 1*9th 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**

* 1. **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

* 1. **Graduate advisor**

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

* 1. **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