CURRICULUM VITA

PERSONAL INFORMATION

Ping Lu
Albert W. Johnson Distinguished Professor and Chair
Department of Aerospace Engineering
San Diego State University
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Education

Ph.D.	Aerospace Engineering, the University of Michigan	1988
M.S.E.	Aerospace Engineering, the University of Michigan	1984
B. S.	Beijing Institute of Aeronautics (now Beihang University)	1982

Academic Experience

Distinguished Professor and Chair, Aerospace Engineering	2025-present
Professor and Department Chair, Aerospace Engineering, San Diego State University	2016-2025
Professor, Aerospace Engineering, Iowa State University	2003-2016
Associate Professor, Aero. Engr. & Engr. Mech., Iowa State University	1995-2003
Assistant Professor, Aero. Engr. & Engr. Mech., Iowa State University	1990-1995
Post-doctoral Associate, Aerospace Engineering, University of Michigan	1988-1989

Honors and Awards

Albert W. Johnson Research Lectureship, San Diego State University 2025
The AWJ Lecture is SDSU's highest recognition of research and scholarly achievement awarded annually to one SDSU senior faculty member. The recipient is named a Distinguished Professor (a life-time title).

Outstanding Contribution to AIAA at the National Level 2018
AIAA San Diego Section

Fellow, American Institute of Aeronautics and Astronautics (AIAA) 2016
"*For outstanding contributions in theory, methodology and algorithms for advanced guidance, particularly in entry and ascent flight of space transportation systems*"
Less than 30 AIAA Fellows are elected worldwide each year.

NASA Johnson Space Center Director's Innovation Group Achievement Award 2016
"*For exceptional work in pioneering the development of a fully-numeric predictor-corrector entry guidance algorithm for the atmospheric entry of space vehicles*".
The guidance algorithm cited was developed by Prof. Ping Lu

Mechanics and Control of Flight (MCF) Award (AIAA) 2008
"*For contributions in advanced guidance algorithms for entry and ascent flight"*
The AIAA MCF Award is a prestigious award in aerospace guidance, control, and flight mechanics community, with a long and rich history since 1967. The MFC Award is presented for an outstanding recent technical or scientific contribution by an individual in the mechanics, guidance, or control of flight in space or the atmosphere.

AIAA Sustained Service Award 2006
"*For exceptional sustained service to the AIAA through contributions at the publication, sector and technical service levels*

Young Engineering Faculty Research Award, Iowa State University 1997

LEADERSHIP EXPERINCE

Editor-in-Chief Position

Editor-in-Chief, *Journal of Guidance, Control, and Dynamics* (JGCD) 2013-present
The JGCD is the premier international journal in aerospace guidance, control, and flight dynamics, and one of the top ranked research journals in the category of Aerospace Engineering by all major citation indices. Under Prof. Lu's leadership, JGCD has become the highest ranked journal by the AIAA, the 2nd largest AIAA journal in terms of paper submissions and circulation. As the EIC, Prof. Lu oversees 2 Deputy Editors and 36 Associate Editors and is responsible for quality and operation of JGCD.

Department Chair

Department of Aerospace Engineering, San Diego State University 2016-present
Under Prof. Lu's leadership, the Aerospace Engineering Department at SDSU has transformed from a Traditional aeronautical engineering program to a vibrant modern aerospace engineering department. We have built from ground up a respectable Space program that is now an integral part of education and research enterprises. Despite several faculty retirements since 2016, the department has doubled the tenured/tenure-track faculty and tripled the research funding and PhD students. Aerospace Engineering degree program has grown to be the second largest degree program in the College of Engineering at SDSU.

RESEARCH ACTVITIES

Professor Lu is the leading researcher on Advanced Aerospace Guidance of space transportation systems, particularly in Entry, Descent, and Landing (EDL). He is the developer of the state-of-the-art planetary entry guidance algorithm FNPEG and the first optimal aerocapture guidance algorithm FNPAG, both widely used by NASA and industry; the propellant-optimal powered descent guidance algorithm G-POLAR, recently developed by Prof. Lu, will be flight tested in 2025 onboard a rocket-powered lander in a NASA project.

Current Research

- Advanced Entry, Descent, and Landing (EDL) guidance for space transportation systems
  In close collaboration with NASA's human space flight programs, development and maturation of advanced EDL guidance algorithms for fully autonomous, end-to-end optimal entry and landing of crewed missions on the Moon and Mars

- Computational Guidance and Control for autonomous aerospace systems
  Development of theory, methodology, algorithms, and software for real-time on-board applications, model- and data-based computational methods for autonomous and fault-tolerant operations of aerospace systems; autonomous trajectory optimization and planning; theoretically and physically informed algorithmic designs for computational efficiency and assured convergence; applications in highly constrained missions and on-board environments; Applications to space transportation systems from launch ascent, on-orbit maneuvers, rendezvous and proximity operations, orbital transfers, aerocapture, and planetary EDL operations

- Hypersonic guidance and flight mechanics

Guidance of hypersonic gliding flight; Optimal hypersonic powered (booster) flight; Hypersonic flight mechanics; integration of advanced guidance and control in multidisciplinary hypersonic systems

Research Impact

The standardized citation metrics (c-score) developed by a Stanford Team has been accepted as a more accurate measure of author impact and their annual top 2% author list in 176 scientific subfields is considered a prestigious recognition. (https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3000384).
The following table summarizes the ranking of Prof. Lu in the subfield of Aerospace-Aeronautics by the Stanford c-score (self-citations excluded) in the last 3 years. The single-year impact measures the currency of the research impact in the immediate previous year, and the career-long list measures the impact of a researcher over their entire career.
During 2022-2024, Professor Lu ranked 7th - 9th in the single-year top 2% author lists, and 23rd - 24th in the career-long lists, out of more than 50,000 authors worldwide in Aerospace-Aeronautics

Year	Single-year impact ranking (Prof. Lu)	Career-long impact ranking (Prof. Lu)	Total # of authors indexed in Aerospace-Aeronautics subfield
2024	No. 7	No. 24	58,309
2023	No. 9	No. 24	55,422
2022	No. 9	No. 23	49,631

Journal Articles

Influential Editorials

E1. P. Lu, "Introducing Computational Guidance and Control", *Journal of Guidance, Control, and Dynamics*, Vol. 40, No. 2, 2017
E2. P. Lu, "What is Guidance?", *Journal of Guidance, Control, and Dynamics*, Vol. 44, No. 7, 2021.
E3. P. Lu, "Deeper Learning Needed from Machine Learning", *Journal of Guidance, Control, and Dynamics*, Vol. 47, No. 1, 2024.

Research Articles

J1. P. Lu and C. Davami, "Model Predictive Guidance: A Fixed-Point Algorithm", *Journal of Guidance, Control, and Dynamics*, Vol. 48, No. 4, 2025
J2. M. Sagliano, P. Lu, D. Seelbinder, and S. Theil, "Analytical Treatise on Endo-Atmospheric Fuel-Optimal Rocket Landing," *Journal of Guidance, Control, and Dynamics*, Vol. 48, No. 3, 2025
J3. P. Lu and C. Davami, "Rethinking Propellant-Optimal Powered Descent Guidance", *Journal of Guidance, Control, and Dynamics*, Vol. 47, No. 10, 2024.
J4. S. Sandoval, J. Hwang, and P. Lu, "Abort Guidance During Lunar Powered Descent", *Journal of Guidance, Control, and Dynamics*, Vol. 47, No. 3, 2024.
J5. P. Lu, S. Sandoval, and C. Davami, "Fast and Robust Optimization of Full Trajectory From Entry Through Powered Descent", *Journal of Guidance, Control, and Dynamics*, Vol. 47, No. 2, 2024
J6. M. Sagliano, D. Seelbinder, S. Theil, and P. Lu, "Six-Degree-of-Freedom Rocket Landing Optimization via Augmented Convex-Concave Decomposition", *Journal of Guidance, Control, and Dynamics*, Vol. 47, No. 1, pp. 20-35, 2024
J7. B. Pan, Y. Ni, Y. Ma, and P. Lu, "Smoothing Homotopy Methods for Solving Nonlinear Optimal Control Problems", *Journal of Guidance, Control, and Dynamics*, Vol. 46, No. 8, pp. 1470-1484, 2023
J8. P. Lu and R. Callan, "Propellant-Optimal Powered Descent Guidance Revisited", *Journal of Guidance, Control, and Dynamics*, Vol. 46, No. 2, pp. 215-230, 2023
J9. P. Lu, A. Lewis, R. Adams, M. DeVore, and C. Petersen, "Finite-Thrust Natural Motion Circumnavigation Injection by Convex Optimization", *Journal of Guidance, Control, and Dynamics*, Vol. 45, No. 3, 2022, pp. 453-467

J10. P. Lu, "Convex-Concave Decomposition of Nonlinear Equality Constraints in Optimal Control," *Journal of Guidance, Control, and Dynamics*, Vol. 44, No. 1, 2021, pp. 4-14
J11. P. Lu, "Theory of Fractional-Polynomial Powered Descent Guidance", *Journal of Guidance, Control, and Dynamics*, Vol. 43, No. 3. 2020, pp. 398-409.
J12. P. Lu, "Augmented Apollo Powered Descent Guidance", *Journal of Guidance, Control, and Dynamics,* Vol. 42, No. 3, 2019, pp. 447-457.
J13. C. Wan, D. Dai, and P. Lu, "An Alternating Minimization Algorithm for Polynomial Optimal Control Problems", *Journal of Guidance, Control, and Dynamics,* Vol. 42, No. 4, 2019, pp. 723-736
J14. B. Pan, X. Pan, and P. Lu, "Finding Best Solution in Low-Thrust Trajectory Optimization by Two-Phase Homotopy", *Journal of Spacecraft and Rockets*, Vol. 56, No. 1, 2019, pp.283-291
J15. P. Lu, "Propellant-Optimal Powered Descent Guidance", *Journal of Guidance, Control, and Dynamics,* Vol. 41, No. 4, 2018, pp. 813-826.
J16. R. Pinson and P. Lu, "Trajectory Design Employing Convex Optimization for Landing on Irregularly Shaped Asteroids", *Journal of Guidance, Control, and Dynamics,* Vol. 41, No. 6, 2018, pp. 1243-1256.
J17. P. Lu, C. Brunner, S. Stachowiak, G. Mendeck, M. Tigges, and C. Cerimele, "Verification of a Fully Numerical Entry Guidance Algorithm", *Journal of Guidance, Control, and Dynamics*, Vol. 40, No. 2, pp. 230-247, 2017.
J18. X. Liu, P. Lu, and B. Pan, "Survey of Convex Optimization for Aerospace Applications", *Astrodynamics*, Vol. 1, No. 1, p. 23-40, 2017
J19. X. Liu, Z. Shen, and P. Lu, "Closed-Loop Optimization of Guidance Gain for Constrained Impact", *Journal of Guidance, Control, and Dynamics*, Vol. 40, No. 2, pp. 453-460, 2017.
J20. B. Pan, P. Lu, X. Pan, and Y. Ma, "Double-Homotopy Method for Solving Optimal Control Problems", *Journal of Guidance, Control, and Dynamics*, Vol. 39, No. 8, 2016
J21. X. Liu, Z. Shen, and P. Lu, "Exact Convex Relaxation for Optimal Flight of Aerodynamically Controlled Missiles", *IEEE Transactions on Aerospace and Electronic Systems,* Vol. 52, No. 4, 2016, p. 1881-1892,
J22. X. Liu, Z. Shen, and P. Lu, "Entry Trajectory Optimization by Second-Order Cone Programming", *Journal of Guidance, Control, and Dynamics,* Vol. 39, No. 2, 2016, pp. 227-241
J23. P. Lu, "Entry Guidance Using Time-Scale Separation in Gliding Dynamics*", Journal of Spacecraft and Rockets*, Vol. 52, No. 4, 2015, pp. 1253-1258
J24. P. Lu, Cerimele, C., Tigges, M., and Matz, D., "Optimal Aerocapture Guidance", *Journal of Guidance, Control, and Dynamics*, Vol. 38, No. 4, 2015, pp. 553-565
J25. X. Liu, Z. Shen, and P. Lu, "Solving the Maximum-Crossrange Problem via Successive Second-Order Cone Programming with Line Search", *Aerospace Science and Technology*, Vol. 47, Dec. 2015, pp. 10-20.
J26. P. Lu, "Entry Guidance: A Unified Method", *Journal of Guidance, Control, and Dynamics,* Vol. 37, No. 3, 2014, pp. 713—728.
J27. X. Liu and P. Lu, "Solving Non-Convex Optimal Control Problems by Convex Optimization", *Journal of Guidance, Control, and Dynamics*, Vol. 37, No. 3, 2014, pp. 750-765
J28. B. Pan, Z. Chen, P. Lu, and G. Bao, "Reduced Transversality Conditions in Optimal Space Trajectories", *Journal of Guidance, Control, and Dynamics*, Vol. 36, No. 5, 2013, p. 1289-1300
J29. P. Lu and X. Liu, "Autonomous Trajectory Planning for Rendezvous and Proximity Operations by Conic Optimization", *Journal of Guidance, Control, and Dynamics*, Vol. 36, No. 2, 2013, p. 375-389.
J30. B. Pan, P. Lu, and Z. Chen, *"*Three-Dimensional Closed-Form Costate Solutions in Optimal Coast", *Acta Astronautica*, Vol. 77, 2012, p. 156-166.
J31. C. Brunner and P. Lu, "Comparison of Fully Numerical Predictor-Corrector and Apollo Skip Entry Guidance Algorithms", *The Journal of the Astronautical Sciences*, Vol. 59, No. 3, 2012, p. 517-540
J32. M. Baldwin and P. Lu, *"*Optimal Deorbit Guidance*", Journal of Guidance, Control, and Dynamics*, Vol. 35, No. 1, 2012, p. 93-103.
J33. B. Pan, P. Lu and Z. Chen, "Coast Arcs in Optimal Multiburn Orbital Transfers", *Journal of Guidance, Control and Dynamics*, Vol. 35, No. 2, 2012, p. 451-461.
J34. S. Xue and P. Lu, *"*Constrained Predictor-Corrector Entry Guidance*", Journal of Guidance, Control, and Dynamics*, Vol.33, No. 4, 2010, pp. 1273-1280
J35. P. Lu and S. Xue, "Rapid Generation of Accurate Entry Landing Footprints", *Journal of Guidance, Control, and Dynamics*, Vol. 33, No. 3, 2010, pp. 756-767
J36. P. Lu and B. Pan, "Highly Constrained Optimal Launch Ascent Guidance", *Journal of Guidance, Control, and Dynamics,* Vol. 33, No. 2, 2010, pp. 404-414

J37. B. Rademacher, P. Lu, A. Strahan, and C. Cerimele, "In-flight Trajectory Planning and Guidance for Autonomous Parafoils", *Journal of Guidance, Control, and Dynamics,* Vol. 32, No. 6, 2009, pp. 1697-1712

J38. L. Zhu, P. Lu, Z. Jing and S. Hu, "A New Robust Adaptive Control Scheme for Non-Affine Nonlinear Systems Based on SHLNN Disturbance Observer", *International Journal of Innovative Computing, Information and Control,* 2009

J39. P. Lu, B. Griffin, G. Dukeman, and F. Chavez, "Rapid Optimal Multi-Burn Ascent Planning and Guidance", *Journal of Guidance, Control, and Dynamics,* Vol. 31, No. 6, pp. 1656-1664, 2008

J40. C. Brunner and P. Lu, "Skip Entry Trajectory Planning and Guidance", *Journal of Guidance, Control, and Dynamics,* Vol., 31, No. 5, 2008, pp. 1210-1219.

J41. P. Lu, "Predictor-Corrector Entry Guidance for Low Lifting Vehicles", *Journal of Guidance, Control, and Dynamics,* Vol. 31, No. 4, 2008, pp. 1067-1075

J42. L. Zhang and P. Lu, "Fixed-Point Algorithms for Optimal Trajectories of Launch Vehicles", *Engineering Optimization,* Vol. 40, No. 4, 2008, pp. 361-381

J43. P. Lu, "Asymptotic Analysis of Quasi-Equilibrium Glide in Lifting Entry Flight", *Journal of Guidance, Control, and Dynamics,* Vol. 29, No. 3, 2006, pp. 662-670.

J44. P. Lu, D. Doman, and J. Schierman, "Adaptive Terminal Guidance for Hypervelocity Impact in Specified Direction", *Journal of Guidance, Control, and Dynamics,* Vol. 29, No. 2, 2006, pp. 269-278

J45. Z. Shen, and P. Lu, "On-Board Entry Trajectory Planning for Sub-Orbital Flight", *Acta Astronautica,* Vol. 56, Issue 6, 2005, pp. 573-591

J46. Z. Shen, and P. Lu, "Dynamic Lateral Guidance Logic", (invited paper in a special section on Reusable Launch Vehicle Guidance and Control), *Journal of Guidance, Control, and Dynamics,* Vol. 27, No. 6, 2004, pp. 949-959.

J47. P. Lu, H. Sun, and B. Tsai, "Closed-Loop Endo-Atmospheric Ascent Guidance", *Journal of Guidance, Control, and Dynamics,* Vol. 26, No. 2, 2003, pp. 283-294.

J48. Z. Shen, and P. Lu, "On-Board Generation of Three-Dimensional Constrained Entry Trajectories", Journal *of Guidance, Control, and Dynamics,* Vol. 26, No. 1, 2003, pp. 111-121.

J49. P. Lu, and Z. Shen, "A Unifying Treatment to Control of Nonlinear Systems with Two Time Scales", *Journal of Guidance, Control, and Dynamics,* Vol. 25, No. 5, 2002, pp 975-979.

J50. J. Burken, P. Lu, Z. Wu, and C. Bahm, "Two Reconfigurable Flight-Control Design Methods: Servomechanism and Control Allocation", *Journal of Guidance, Control, and Dynamics,* Vol. 24, No. 3, 2001, pp. 482-493.

J51. P. Lu, "Closed-Form Control Laws for Linear Time-Varying Systems", *IEEE Transactions on Automatic Control,* Vol. 45, No. 3, 2000, pp. 537-542.

J52. L. Tian, P. Lu, and J. Burken, "Nonlinear Engine-Only Flight Control", *Nonlinear Problems in Aviation and Aerospace,* edited by S. Sivasundaram, Gordon and Breach Science Publishers, London, U. K., 1999.

J53. P. Lu, "Regulation about Time-Varying Trajectories: Precision Entry Guidance Illustrated", *Journal of Guidance, Control, and Dynamics,* Vol. 22, No. 6, 1999, pp. 784-790.

J54. P. Lu and J. Burken, "Controlling Aircraft with Engine Thrust Only: Nonlinear Challenges", *Nonlinear Analysis,* Vol. 35, 1999, pp. 21-35.

J55. P. Lu, "Approximate Nonlinear Receding-Horizon Control Laws in Closed Form", *International Journal of Control (IJC),* Vol. 71, No. 1, 1998, pp. 19-34.

J56. P. Lu, and J. Hanson, "Entry Guidance for the X-33 Vehicle", *Journal of Spacecraft and Rockets,* Vol. 35, No. 3, 1998, pp.342-349.

J57. P. Lu, "Intercept of Nonmoving Targets at Arbitrary Time-Varying Velocity", *Journal of Guidance, Control, and Dynamics,* Vol. 21, No. 1, pp. 176-178, 1998.

J58. P. Lu, "Nonlinear Systems with Control and State Constraints", *Optimal Control Applications and Methods,* Vol. 18, 1997, pp. 313-326.

J59. P. Lu, "Optimal Semi-Analytical Guidance for Reentry Flight", *Space Technology,* Vol. 17, No. 1, 1997, pp. 7-14.

J60. P. Lu, "Tracking Control of Nonlinear Systems with Bounded Controls and Control Rates", *Automatica,* Vol. 22, No. 6, pp. 1199-1202, 1997.

J61. P. Lu, "Entry Guidance and Trajectory Control for Reusable Launch Vehicle," *Journal of Guidance, Control, and Dynamics,* Vol. 20, No. 1, pp. 143-149, 1997.

J62. P. Lu, "Constrained Tracking Control of Nonlinear Systems," *Systems and Control Letters,* Vol. 27, 1996, pp. 305-314.

J63. P. Lu and B. L. Pierson, "Optimal Aircraft Terrain-Following with Nonlinear Engine Dynamics," *Journal of*

Guidance, Control, and Dynamics, Vol. 19, No. 1, 1996, pp. 240-242.

J64. P. Lu, "Nonlinear Trajectory Tracking Guidance with Application to a Launch Vehicle," *Journal of Guidance, Control, and Dynamics*, Vol. 19, No. 1, 1996, pp. 99-106.

J65. P. Lu and B. L. Pierson, "Aircraft Terrain-Following Based on a Nonlinear Continuous Predictive Control Approach*", Journal of Guidance, Control, and Dynamics*, Vol. 17, No. 4, pp. 817-823, 1995.

J66. P. Lu, "Optimal Predictive Control of Nonlinear Continuous Systems", *International Journal of Control*, Vol. 62, No. 3, 1995, pp. 633-649.

J67. P. Lu and B.L. Pierson, "Optimal Terrain-Following Analysis and Trajectory Generation*", Journal of Guidance, Control, and Dynamics*, Vol. 17, No. 3, pp. 555-560, 1995.

J68. K.C. Lin and P. Lu, "Inverse Simulation - An Error Analysis", *Simulation Journal*, Vol. 65, No. 6, 1995, p. 385-392.

J69. N.X. Vinh, E.G. Gilbert, R.M. Howe, D. Sheu, and P. Lu, "Reachable Domain for Interception at Hyperbolic Speeds", *Acta Astronautica*, Vol. 35, No. 1, 1995, pp. 1-8.

J70. P. Lu, "Nonlinear Predictive Controllers for Continuous Systems," *Journal of Guidance, Control and Dynamics*, Vol. 17, No. 3, 1994, pp. 553-560.

J71. P. Lu, and M. Asif Khan, "Nonsmooth Trajectory Optimization: An Approach Using Continuous Simulated Annealing," *Journal of Guidance, Control, and Dynamics*, Vol. 17, No. 4, 1994, pp. 685-691.

J72. M. Asif Khan, and P. Lu, "New Technique for Nonlinear Control of Aircraft," *Journal of Guidance, Control, and Dynamics*, Vol. 17, No. 5, 1994.

J73. P. Lu, and K. C. Lin, "Nonlinear Control of an Autonomous Tracked Vehicle," *Transactions of the Institute of Measurement and Control*, Vol. 16, No. 5, 1994.

J74. P. Lu, "Analytical Solution to Constrained Hypersonic Trajectories," *Journal of Guidance, Control and Dynamics* , Vol. 16, No. 5, 1993, pp. 956-960.

J75. P. Lu, and N. X. Vinh, "On the Minimax Optimal Control Problem and Its Variations," *Optimal Control* --- International Series of Numerical Mathematics, Vol. 111, ed. by Klaus H. Well, Birkhauser Verlag, Germany, 1993, pp. 99-112.

J76. P. Lu, "Inverse Dynamics Approach to Trajectory Optimization for an Aerospace Plane," *Journal of Guidance, Control and Dynamics*, Vol. 16, No. 4, 1993, pp. 726-732.

J77. P. Lu, "A New Nonlinear Optimal Feedback Control Law," *Control-Theory and Advanced Technology*, Vol. 9, No. 4, 1993, pp. 947-954.

J78. K-C Lin, and P. Lu, "State-Tracking Controller Design for A Tracked Vehicle", *Journal of Control Systems and Technology*", Vol. 1, No. 4, 1993, pp. 297-302.

J79. P. Lu, "Use of Approximate Gradients in Trajectory Optimization," *Journal of Guidance, Control and Dynamics*, Vol. 15, No. 5, 1992, pp. 1299-1301.

J80. P. Lu, "Optimal Feedback Control Laws Using Nonlinear Programming," *Journal of Optimization Theory and Applications* (JOTA), Vol. 71, No. 3, 1991, pp. 599-611.

J81. P. Lu and N. X. Vinh, "Optimal Control Problems with Maximum Functional," *Journal of Guidance, Control, and Dynamics*, Vol. l4, No. 6, 1991, pp. 1215-1223.

J82. E. G. Gilbert, R. M. Howe, P. Lu, and N. X. Vinh, "Optimal Aeroassisted Intercept Trajectories at Hyperbolic Speeds," *Journal of Guidance, Control, and Dynamics*, Vol. 14, No. 1, 1991, pp. 1215-1223.

J83. N. X. Vinh, P. Lu, R. M. Howe and E. G. Gilbert, "Optimal Interception with Time Constraint," *Journal of Optimization Theory and Applications*, Vol. 66, No. 3, 1990, pp. 361-390.

J84. P. Lu and N. X. Vinh, "Minimax Optimal Control for Atmospheric Fly-Through Trajectories," *Journal of Optimization Theory and Applications*, Vol. 57, No. 1, 1988, pp. 41-58.

J85. N. X. Vinh and P. Lu, "Chebyshev Minimax Problems for Skip Trajectories," The *Journal of the Astronautical Sciences (JAS)*, Vol. 36, No. 102, 1988, pp. 179-197.

J86. N. X. Vinh and P. Lu, "Necessary Conditions for Maximax Problems with Application to Aeroglide of Hypervelocity Vehicles," *Acta Astronautica*, Vol. 15, No. 5-6, 1987, pp. 413-420.

Conference and Proceedings Papers

C1. P. Lu, "Assessing Propellant-Optimal Guidance for Crewed Lunar Descent", AIAA Paper 2025-2598, Guidance, Navigation, and Control Conference, January 2025

C2. C. Davami, P. Lu, and A. Rosengren, "Model Predictive Tracking Guidance Applied to Planetary Entry and Powered Descent", AIAA Paper 2025-2599, Guidance, Navigation, and Control Conference, January 2025

C3. M. Sagliano, D. Seelbinder, S. Theil, and P. Lu, "Six-Degree-of-Freedom Entry to Powered Descent Optimization for High-Mass Mars Landings", AIAA Paper 2025-2596, Guidance, Navigation, and Control Conference, January 2025

C4. C. Davami, P. Lu, B. Johnson, and A. Rosengren, "Optimizing End-to-End EDL Trajectories for High-Mass Mars Missions", AAS Paper 24-043, AAS Guidance and Control Conference, February, 2024

C5. M. Sagliano, D. Seelbinder, S. Theil, B. Johnson, and P. Lu, "Six-Degrees-of-Freedom Aero-Propulsive Entry Trajectory Optimization", AIAA Paper 2024-1171, AIAA Guidance, Navigation, and Control Conference. January 2024

C6. M. Sagliano, P. Lu, D. Seelbinder, and Stephan Theil, "Six-Degrees-of-Freedom Rocket Landing Optimization by Augmented Convex-Concave Decomposition", AIAA Paper 2023-2005, AIAA Guidance, Navigation, and Control Conference. January 2023

C7. P. Lu and R. Callan, , "Propellant-Optimal Powered Descent Guidance Revisited", AIAA Paper 2023-2006, AIAA Guidance, Navigation, and Control Conference, January 2023.

C8. S. Sandoval, R. A. Lugo, P. Lu, and A. D. Cianciolo, "Simulation Comparison of Entry and Powered Descent Guidance Algorithms for a Human-Scale Mars Mission", AAS Guidance and Control Conference, AAS Paper 22-042, February 2022

C9. S. Sandoval, P. Lu, J. Hwang, J. Rea, and R. Sostaric, "Multiple Optima in Abort Ascent during Lunar Powered Descent", AIAA Paper 2022-0949, January 2022

C10. P. Lu and S. Sandoval "Abort Guidance during Powered Descent for Crewed Lunar Missions", AIAA 2021-0505, AIAA Guidance, Navigation, and Control Conference**,** January 2021

C11. M. Devore, R. Adams, A. Reed, A. Lewis, and P. Lu "Closed-Loop Optimal Control for Spacecraft Rendezvous and Proximity Operations Using Second Order Cone Program", AAS 21-355, 31st AAS/AIAA Space Flight Mechanics Meeting**,** Feb. 1-3, 2021

C12. S. Sandoval and P. Lu, "Powered Descent Guidance for a Crewed Lunar Landing Mission", AAS 2020-044, 43rd Annual AAS Guidance and Control Conference**,** Jan 31–Feb 5, 2020, Breckenridge, CO

C13. B. Johnson, R. Sostaric, and P. Lu, "Mid Lift-to-Drag Rigid Vehicle 6-DoF Performance for Human Mars Entry, Descent, and Landing: A Fractional Polynomial Powered Descent Guidance Approach", AIAA 2020-1513, AIAA Atmospheric Flight Mechanics Conference, Jan. 6-10, 2020, Orlando, FL

C14. B. Johnson, P. Lu, B. Nikaido, Z. Hays, and S. D'Souza, "Pterodactyl: Development and Performance of Guidance Algorithms for a Mechanically Deployed Entry Vehicle", AIAA Guidance, Navigation, and Control Conference, Jan. 6-10, 2020, Orlando, FL

C15. S. You, C. Wan, R. Dai, P. Lu, and J. Rea, "Learning-based Optimal Control for Planetary Entry, Powered Descent, and Landing Guidance", AIAA 2020-0849, AIAA Guidance, Navigation, and Control Conference, Jan. 6-10, 2020, Orlando, FL

C16. P. Lu, "The Theory of Fractional-Polynomial Powered Decent Guidance", AIAA 2020-0845, AIAA Guidance, Navigation, and Control Conference, Jan. 6-10, 2020, Orlando, FL

C17. J. Breanna, P. Lu, and Cerimele, C, "Mid-Lift-to-Drag Ratio Rigid Vehicle 6-DoF EDL Performance Using Tunable Apollo Powered Descent Guidance," AAS Paper 19–619, AAS/AIAA Astrodynamics Specialist Conference, August 2019, Portland, ME

C18. C. Sun, D. Ran, and P. Lu, "Multi-Phase Spacecraft Mission Optimization by Quadratically Constrained Quadratic Programming", AIAA Paper 2019-1677, AIAA Guidance, Navigation, and Control Conference, January 2019, San Diego, CA,

C19. P. Lu, "Fuel-Optimal and Apollo Powered Descent Guidance Compared for High-Mass Mars Mission" AAS Paper 18-054, AAS Guidance & Control Conference, Breckenridge, CO, Feb. 2018

C20. B. Johnson, E. Braden, R.Sostaric, C. Cerimele, and P. Lu, "Entry, Descent, and Landing Performance for a Mid-Lift-to-Drag Ratio Vehicle at Mars", AAS Paper 18-053, AAS Guidance & Control Conference, Breckenridge, CO, Feb. 2018

C21. P. Lu, R. Sostaric, and G. Mendeck, "Adaptive Powered Descent Initiation and Fuel-Optimal Guidance for Mars Applications", AIAA Paper 2018-0616, AIAA Guidance, Navigation, and Control Conference, January 2018

C22. B. Johnson, C. Cerimele, S. Stachowiak, R.Sostaric, D. Matz, and P. Lu, "Mid-Lift-to-Drag Ratio Rigid Vehicle Control System Design and Simulation for Human Mars Entry"**,** AIAA Paper 2018-0615, AIAA Guidance, Navigation, and Control Conference, January 2018

C23. K. Webb, P. Lu, A. D. Cinanciolo, "Aerocapture Guidance for a Human Mars Mission", AIAA Paper 2017-01900, AIAA Guidance, Navigation, and Control Conference, January, 2017.

C24. D. Matz, P. Lu, G. Mendeck, and R. Sostaric, "Application of a Fully Numerical Guidance to Mars Aerocapture", AIAA Paper 2017-1901, AIAA Guidance, Navigation, and Control Conference, January, 2017.

C25. W. Johnson, P. Lu, S. Stachowiak, "Automated Re-entry System Using FNPEG", AIAA Paper 2017-1899, AIAA Guidance, Navigation, and Control Conference, January, 2017.

C26. R. Pinson and P. Lu, "Generation of Fuel Optimal Powered Descent Trajectories for Irregular Shaped Asteroids", AIAA Paper 2016-5378, SPACE 2016, Long Beach, CA, Sept. 2016

C27. P. Lu, C. Brunner, S. Stachowiak, G. Mendeck, M. Tigges, and C. Cerimele, "Verification of a Fully Numerical Entry Guidance Algorithm", AIAA Paper 2016-0377 AIAA Guidance, Navigation, and Control Conference, January, 2016.

C28. K. Webb and P. Lu, "Entry Guidance by Onboard Trajectory Planning and Tracking", AIAA Paper 2016-0279, AIAA Guidance, Navigation, and Control Conference, January, 2016.

C29. C. Sun, R. Dai, and P. Lu, "Solving Polynomial Optimal Control Problems via Iterative Convex Optimization", AIAA Paper 2016-0371, AIAA Guidance, Navigation, and Control Conference, January, 2016.

C30. R. Pinson and P. Lu, "Rapid Generation of Optimal Asteroid Powered Descent Trajectories via Convex Optimization", AAS Paper 15-616, AAS/AIAA Astrodynamics Specialist Conference, Vail, CO, August 9-13, 2015

C31. P. Lu, Cerimele, C., Tigges, M., and Matz, D., "Optimal Aerocapture Guidance", AIAA Paper 2015-1771, AIAA Guidance, Navigation, and Control Conference, Jan. 5-9, 2015, Kissimmee, FL.

C32. P. Lu, S. Forbes, and M. Baldwin, "Gliding Guidance of High L/D Hypersonic Vehicles", AIAA Paper 2013-4648, AIAA Guidance, Navigation, and Control Conference, Boston, MA, August, 2013

C33. X. Liu and P. Lu, "Robust Trajectory Optimization for Highly Constrained Rendezvous and Proximity Operations", AIAA Paper 2013-4720, AIAA Guidance, Navigation, and Control Conference, Boston, MA, August, 2013

C34. X. Liu and P. Lu, Solving Non-Convex Optimal Control Problems by Convex Optimization", AIAA Paper 2013-4725, AIAA Guidance, Navigation, and Control Conference, Boston, MA, August, 2013

C35. P. Lu, S. Forbes, and M. Baldwin, "A Versatile Powered Guidance Algorithm", AIAA Paper 2012-4843, AIAA Guidance, Navigation, and Control Conference, Minneapolis, MN, August, 2012

C36. P. Lu and X. Liu, "Autonomous Trajectory Planning for Rendezvous and Proximity Operations by Conic Optimization", AIAA Paper 2012-4924, AIAA Guidance, Navigation, and Control Conference, Minneapolis, MN, August, 2012

C37. P. Lu, D. Neal, S. Su, K. Horneman, and J. Schierman, "Pitch-Over Maneuver and Guidance for Rocket-Back Boosters", AIAA Guidance, Navigation, and Control Conference, Portland, OR, August 8-11, 2011.

C38. S. Su, D. Neal, K. Horneman, J. Schierman, and P. Lu, "Integrated Rocket-Back Guidance and a Comparative Rocket-Back Study", AIAA Guidance, Navigation, and Control Conference, Portland, OR, August 8-11, 2011.

C39. M. Baldwin and P. Lu, "Autonomous Optimal Deorbit Guidance", AAS-Paper 11-584, AAS/AAIA Astrodynamics Specialist Conference, Girdwood, AK, July 31- August 4, 2011

C40. B. Pan, P. Lu and Z. Chen, "Coast Arcs in Optimal Multiburn Orbital Transfers", AAS-Paper 11-557, AAS/AAIA Astrodynamics Specialist Conference, Girdwood, AK, July 31- August 4, 2011

C41. B. Pan and P. Lu, "Improvements to Optimal Launch Ascent Guidance", AIAA Paper 2010-8174, Guidance, Navigation, and Control Conference, August 2-5, 2010, Toronto, Canada

C42. C. Brunner and P. Lu, "Comparison of Numerical Predictor-Corrector and Apollo Skip Entry Guidance Algorithms", AIAA Paper 2010-8307, Guidance, Navigation, and Control Conference, August 2-5, 2010, Toronto, Canada

C43. O. Murillo and P. Lu, "Fast Ascent Trajectory Optimization for Hypersonic Air-Breathing Vehicles", AIAA Paper 2010-8173, Guidance, Navigation, and Control Conference, August 2-5, 2010, Toronto, Canada

C44. M. Baldwin, P. Lu, and B. Pan, "On Autonomous Optimal Deorbit Guidance", AIAA Paper 2009-5667, Guidance, Navigation, and Control Conference, August 10-13, 2009

C45. S. Xue and P. Lu, "Constrained Predictor-Corrector Entry Guidance", AIAA Paper 2009-5767, Guidance, Navigation, and Control Conference, August 10-13, 2009

C46. B. Pan and P. Lu, "Rapid Optimization of Multiburn Rocket Trajectories Revisited", AIAA Paper 2009-6105, Guidance, Navigation, and Control Conference, August 10-13, 2009

C47. P. Lu and B. Pan, "Highly Constrained Optimal Launch Ascent Guidance", AIAA Paper 2009-5961, Guidance, Navigation, and Control Conference, August 10-13, 2009

C48. P. Lu and S. Xue, "Rapid Generation of Accurate Entry Landing Footprint", AIAA Paper 2009-5772, Guidance, Navigation, and Control Conference, August 10-13, 2009

C49. F. Chavez and P. Lu, "Rapid Ascent Trajectory Planning and Closed-Loop Guidance for Responsive Launch", AIAA-RS-2009-1004, the 7th Responsive Space Conference, April 27-30, 2009

C50. P. Lu, "Entry Trajectory Optimization with Analytical Feedback Angle Law", AIAA Paper 2008-7268, Guidance, Navigation, and Control Conference, August 18-21, 2008, Honolulu, Hawaii.

C51. B. Rademacher and P. Lu, "Trajectory Design, Guidance, and Control for Autonomous Parafoils", AIAA Paper 2008-7417, Guidance, Navigation, and Control Conference, August 18-21, 2008, Honolulu, Hawaii.

C52. O. Murillo and P. Lu, "Comparison of Autonomous Aerial Refueling Controllers Using Reduced Order Models", AIAA Paper 2008-6790, Guidance, Navigation, and Control Conference, August 18-21, 2008, Honolulu, Hawaii.

C53. P. Lu, "A Predictor-Corrector Entry Guidance Approach for Low Lifting Vehicles", AIAA Paper 2007-6425, AIAA Guidance, Navigation, and Control Conference, August 20-23, 2007, Hilton Head Island, SC

C54. P. Lu, B. Griffin, G. Dukeman, and F. Chavez, "Rapid Optimal Multi-Burn Ascent Planning and Guidance", AIAA Paper 2007-6773, AIAA Guidance, Navigation, and Control Conference, August 20-23, 2007, Hilton Head Island, SC

C55. C. Brunner and P. Lu, "Skip Entry Trajectory Planning and Guidance", AIAA Paper 2007-677, AIAA Guidance, Navigation, and Control Conference, August 20-23, 2007, Hilton Head Island, SC

C56. B. Williams, P. Lu, T. Shih, and R. Kreeger, "Q3D-Wing for Flight Control of Aircraft with Ice Accretion", 45th AIAA Aerospace Sciences Meeting and Exhibit, Jan 8-11, 2007, Reno, Nevada

C57. J. Schierman, M. Lichter, K. Horneman, A. McCormick, P. Lu, and M. Bolender, "Launch Vehicle Rapid Mission Planning with Adaptive Path Generation", AIAA Space 2007 Conference and Exhibition, Sept. 18-20, 2007, Long Beach, CA.

C58. P. Lu and F. Chavez, "Nonlinear Optimal Guidance", AIAA Paper 2006-6087, AIAA Guidance, Navigation, and Control Conference, August 21-24, 2006, Keystone, CO.

C59. P. Lu, L. Zhang, and H. Sun, "Ascent Guidance for Responsive Launch: a Fixed-Point Approach", AIAA Paper 2005-6453, AIAA Guidance, Navigation, and Control Conference, August 15-18, 2005, San Francisco, CA.

C60. P. Lu, D. Doman, and J. Schierman, "Adaptive Terminal Guidance for Hypervelocity Impact in Specified Direction", AIAA Paper 2005-6059, AIAA Guidance, Navigation, and Control Conference, August 15-18, 2005, San Francisco, CA.

C61. P. Lu, "Asymptotic Analysis of Quasi-Equilibrium Glide in Lifting Entry Flight", AIAA Paper 2005-6128, AIAA Atmospheric Flight Mechanics Conference, August 15-18, 2005, San Francisco, CA..

C62. P. Lu, "Adaptive Proportional-Navigation Guidance", Paper CCC-062, 24th Chinese Control Conference, Guangzhou, China, July 15-18, 2005.

C63. Z. Shen, and P. Lu, "Dynamic Lateral Guidance Logic", AIAA Paper 2004-4773, Guidance, Navigation, and Control Conference, August 16-19, 2004, Providence, RI.

C64. P. Lu and P. Rao, "An Integrated Approach for Entry Mission Design and Flight Simulations", AIAA paper 2004-0702, The 42nd AIAA Aerospace Sciences Meeting and Exhibit, January 5—8, 2004, Reno, NV.

C65. Z. Shen and P. Lu, "On-Board Trajectory Planning Extended to Sub-Orbital Flight", AIAA paper 2003-5736, AIAA Guidance, Navigation, and Control Conference, August 11-14, 2003, Austin, TX.

C66. S. Kahler, P. Lu, and J. Hanson, "Optimal Interplanetary Trajectories Using an Advanced Pulsed Fusion Propulsion System", AAS paper 03-571, AAS/AIAA Astrodynamics Specialists Conference, August 3-7, 2003, Big Sky, Montana.

C67. P. Lu, H. Sun, and B. Tsai, "Closed-Loop Endo-atmospheric Ascent Guidance", AIAA Guidance, Navigation, and Control Conference, August 5-8, 2002, Monterey, CA.

C68. Z. Shen, and P. Lu, "On-Board Generation of Three-Dimensional Constrained Entry Trajectories", AIAA Guidance, Navigation, and Control Conference, August 5-8, 2002, Monterey, CA.

C69. Zhu, D. Lawrence, J. Fisher, Y. Shtessel, A. Hotel, and P. Lu, "Direct Fault Tolerant RLV Attitude Control – A Singular Perturbation Approach", AIAA Guidance, Navigation, and Control Conference, August 5-8, 2002, Monterey, CA.

C70. P. Lu, and Z. Shen, "Control of Nonlinear Systems with Two Time Scales", *Proceedings* of *the AIAA Guidance, Navigation, and Control Conference*, Montreal, Canada, August 6-9, 2001

C71. P. Lu, Z. Shen, G. Dukeman, and J. Hanson, " Entry Guidance by Trajectory Regulation", the *Proceedings of the AIAA Guidance, Navigation, and Control Conference*, August 14-17, 2000, Denver, CO.

C72. P. Lu, "Reconfigurable Control of Systems with Control Redundancy", Proceedings of the 19th Chinese

Control Conference, Hong Kong, December 6-8, 2000.

C73. J. Burken, P. Lu, and Z. Wu, "Reconfigurable Flight Control Designs with Application to the X-33 Vehicle", the Proceedings of AIAA Guidance, Navigation, and Control Conference, August 9-11, 1999, Portland, OR.

C74. P. Lu, "Approximate Receding-Horizon Control Laws for Linear Time-Varying Systems", *Proceedings of the14th World Congress of the International Federation of Automatic Control*, Beijing, China, July 7-11, 1999.

C75. P. Lu, J. Hanson, G. Dukeman, and S. Bhargava, "An Alternative Entry Guidance Scheme for the X-33", *Proceedings of the AIAA Atmospheric Flight Mechanics Conference*, Boston, MA, August 10-12, 1998.

C76. P. Lu and J. Hanson, "Entry Trajectory Design for the X-33 Vehicle", *Proceedings of AIAA Atmospheric Flight Mechanics Conferece*, New Orleans, LA, August 11-13, 1997.

C77. P. Lu, "Optimal Semi-Analytical Guidance for Re-entry Flight," *Proceedings of the 47th International Astronautical Federation Congress*, Beijing, China, October 7-11, 1996.

C78. P. Lu, "Entry Guidance and Trajectory Control for Reusable Launch Vehicle," *AIAA Guidance, Navigation, and Control Conference*, San Diego, CA, July 29-31, 1996.

C79. P. Lu, "Tracking Control of Nonlinear Systems with Bounded Control and Control Rates," *Proceedings of the 13th World Congress of the International Federation of Automatic Control*, San Francisco, CA, June 30-July 5, 1996.

C80. P. Lu, and J. Burken, "Propulsion Controlled Aircraft: a Nonlinear Perspective", *Proceedings of the First International Conference on Nonlinear Problems in Aviation and Aerospace*, Daytona Beach, FL, May 9-11, 1996.

C81. P. Lu and B.L. Pierson, "Aircraft Terrain-Following Based on a Nonlinear Continuous Predictive Control Approach*", Proceedings of AIAA Guidance, Navigation, and Control Conference,* Baltimore, MD. August 9-11, 1995.

C82. P. Lu and B.L. Pierson, "Optimal Terrain-Following Analysis and Trajectory Generation", *Proceedings of AIAA Atmospheric Flight Mechanics Conference*, Baltimore, MD, August 9-11, 1995.

C83. L. Vempati and P. Lu, "Neurocontroller Design for an Aircraft Penetrating Through Windshear", *Proceedings of AIAA Guidance, Navigation, and Control Conference*, Baltimore, MD., August 9-11, 1995.

C84. S. Salehi, J. Lin, K.C. Lin, and P. Lu, "Motion Controller Design for Autonomous Vehicle", *Proceedings of AIAA Guidance, Navigation, and Control Conference*, Baltimore, MD, August 9-11, 1995.

C85. P. Lu, "Tracking Control of General Nonlinear Systems," *Proceedings of IEEE Conference on Decision and Control*, Lake Buena Vista, FL, Dec 10-13, Vol. 4, pp 3814-3815, 1994.

C88. P. Lu and T. Cheng, "On a Nonlinear Flight Control Law," *Proceedings of the 19th International Council Of Aeronautical Sciences Congress/AIAA Aircraft System Conference*, Anaheim, CA, Sept. 18-23,1994.

C87. P. Lu, "A General Nonlinear Guidance Law: Application to a Launch Vehicle," *Proceedings of AIAA Guidance, Navigation and Control Conference*, Scottsdale, AZ, August 1-3, 1994.

C88. P. Lu and M. Asif Khan, "Nonsmooth Trajectory Optimization: An Approach Using Continuous Simulated Annealing," *Proceedings of Atmospheric Flight Mechanics Conference*, Monterey, CA, Aug. 9-11,1993.

C89. M. Asif Khan and P. Lu, "A New Technique for Nonlinear Control of Aircraft," *Proceedings of AIAA Guidance, Navigation and Control Conference*, Monterey, CA August 9-11, 1993.

C90. K. C. Lin and P. Lu, "The Numerical Errors in Inverse Simulation," *Proceedings of AIAA Flight Simulation Technology Conference*, Monterey, CA, August 9-11, 1993.

C91. P. Lu, "Nonlinear Tracking Controller Design, " *Proceedings of American Control Conference*, San Francisco, CA, June 2-4, 1993.

C92. T. Cheng and P. Lu, "A Comparison of Nonlinear Flight Control Laws," *Proceedings of Society of Computer Simulation Multi-Conference*, Washington, DC, March 29-April 2, 1993.

C93. P. Lu, "An Inverse Dynamics Approach to Trajectory Optimization and Guidance for an Aerospace Plane," *Proceedings of AIAA Guidance, Navigation, and Control Conference*, Hilton Head, SC, August 10-12, 1992.

C94. P. Lu, "Minimum-Energy Feedback Control of Robots," *Proceedings of American Control Conference*, Chicago, IL, June 22-24, 1992.

C95. P. Lu and J. Samsundar, "Closed-Form Solution of Constrained Trajectories: Application in Optimal Ascent of Aerospace Planes," Fourth International Aerospace Planes Conference, Orlando, FL, Dec. 1-4, 1992.

C96. P. Lu, "Trajectory Optimization and Guidance for an Advanced Launch System," AIAA paper 92-0732, The 30th Aerospace Sciences Meeting and Exhibit, Reno, NV, Jan. 6-9, 1992.

C97. P. Lu, "Trajectory Optimization and Guidance for a Hypersonic Vehicle," AIAA Paper 91-5068, The Third AIAA International Aerospace Planes Conference, December 3-5, 1991, Orlando, FL.
C98. N. X. Vinh, E. G. Gilbert, R. M. Howe, and P. Lu, "Reachable Domain for Interception at Hyperbolic Speeds," AIAA paper-90-2973, *Proceedings of the AIAA Astrodynamics Conference*, August 20-22, 1990, Portland, OR.
C99. R.M. Howe, E.G. Gilbert, P. Lu, and N. X. Vinh, "Trajectory Optimization of Earth-Launched Interceptors at Supercircular Speeds," Proceedings of the International Society for Optical Engineering, Vol.872, 1988.
C100. R. M. Howe, E. G. Gilbert, P. Lu, G. Shorr and N. X. Vinh, "Computation of Optimal Trajectories Using State-of-the-art Simulation Technology," *Proceedings of the Conference on Aerospace Simulation*, No. 3, February 3-5, 1988, San Diego, CA.
C101. R. M. Howe, E.G. Gilbert, P. Lu, and N. X. Vinh, "Trajectory Optimization of Earth-Launched Interceptors at Supercircular Speeds," Proceedings of the International Society for Optical Engineering, Vol.872, 1988, pp. 12-18.

Selected Keynote Presentation and Invited Lectures in Last Five Years

- "Planetary Powered Descent Guidance in Sixty Years", MAE Seminar, Samuli Department of Mechanical & Aerospace Engineering, UCLA, to be given on May 30, 2025
- Workshop on Advanced Guidance, NASA Engineering and Safety Center GN&C Technical Discipline Team annual meeting, March 25, 2025
- "The Emerging Trends in GN&C", NASA Engineering and Safety Center GN&C Technical Discipline Team annual meeting, March 27, 2025
- Keynote Speech, European Guidance and Control Conference 2024, Bristol, UK, June 11, 2024
- Department Seminar, Ann and H. J. Smead Department of Aerospace Engineering Sciences, University of Colorado Boulder, January 26, 2024
- Special Lecture at 33rd Workshop on JAXA Astrodynamics and Flight Mechanics, July 24, 2023
- "Convex Optimization in Aerospace Guidance and Control", Keynote Speech, International Conference on Aerospace System Science and Engineering (ICASSE) 2023 July 7, 2023
- "The Peril of Linearization", Keynote Speech, International Conference on Aerospace System Science and Engineering (ICASSE) 2021, July 15, 2021
- "A Curiosity in Engineering Mathematics", Keynote Speech, 2020 International Conference on Aerospace Sciences and Technology, July 13, 2020
- "From Apollo to Artemis: Computation and Aerospace Guidance in 50 Years", GALCIT Colloquium, California Institute of Technology, November 1, 2019
- "Integrating Entry and Powered Descent Guidance", Jet Propulsion Laboratory, August 12, 2109
- "Aerospace Guidance in 50 Years", Institute of Aerospace Studies, University of Toronto, April 5, 2019

TEACHING ACTIVITIES

Courses Taught

At San Diego State (Taught 2 courses a year, as the Department Chair)

AE546	Aerospace Guidance and Navigation	(senior elective/graduate; course developer)
AE670	Optimal Control	(graduate; course developer)

At Iowa State (Nominally taught 4 courses a year, as a research-active faculty)

Flight Control Systems I	(undergraduate)
Astrodynamics I	(undergraduate)
Flight Dynamics and Stability	(undergraduate)
Flight Control Systems II	(undergraduate)
Automatic Control for Flight Vehicles	(graduate)
Space Flight Mechanics	(graduate)
Entry Dynamics	(graduate; course developer)
Guidance and Navigation of Aerospace Vehicles	(graduate; course developer)
Optimal Control	(graduate)
Special Topics in Optimization	(graduate)

Graduate Students Supervision (as the dissertation/thesis adviser)

Ph.D. Students (who have graduated)

Professor Lu has served as the advisor for 13 PhD students who have graduated, at both Iowa State and San Diego State University

Master's Students (who have graduated):

Professor Lu has served as the advisor for 30 master's students who have graduated, at both Iowa State and San Diego State University

PROFESSIONAL SERVICES

Editorial Positions

Editor-in-Chief, *AIAA Journal of Guidance, Control and Dynamics*	2013- presen
Associate Editor, *AIAA Journal of Guidance, Control and Dynamics*	1996-2013
Member of Editorial Board *Optimal Control Applications and Methods*	2009-present
Subject Editor (Aerospace and Mechanical Systems), *Optimal Control Applications and Methods*	2004-2008

NASA Engineering & Safety Center (NESC) 2022-present

Prof. Lu is a member of the Technical Discipline Team (TDT) in Guidance, Navigation, and Control, NASA Engineering & Safety Center (NESC). The NESC is a NASA agency-wide organization, created after the Space Shuttle Challenger accident. It provides a forum for reporting technical issues and contributing alternative viewpoints to resolve NASA's highest-risk challenges. Only about 3% of the NESC members are from academia.

Professional Reviews

1. Reviewer for proposals submitted to NSF, AFOSR, NASA, Canadian Natural Sciences and Engineering Research Council, and CASIS (The Center for the Advancement of Science in Space, the organization that manages research activities at the International Space Station)

2. Reviewer for: Journal of Guidance, Control and Dynamics, Journal of Spacecraft and Rockets**,** Acta Astronautica**,** Automatica, IEEE Transactions on Automatic Control; International Journal of Control; ASME Journal of Dynamic Systems, Measurement and Control, ASME Journal of Engineering for Industry; Optimal Control: Applications and Methods; Journal of Optimization Theory and Applications, Journal of Aerospace Engineering; Journal of Vibration and Control, the Journal of Astronautical Sciences.

3. Reviewer for: American Control Conference, IEEE Conference on Decision and Control; IEEE Conference on Control Applications; AIAA Guidance, Navigation and Control Conference; AIAA Atmospheric Flight Mechanics Conference; World Congress of the International Federation of Automatic Control; ASME Design Automation Conference**,** European Control Conference