Dr. Kuo-Chi "Kurt" Lin

E-mail klin@mail.ucf.edu

EDUCATION:

Ph.D., Aerospace Engineering, University of Michigan, 1990
M.S., Aerospace Engineering, University of Michigan, 1986
M.S., Mechanical Engineering, National Cheng-Kung University, Taiwan, 1979
B.S., Mechanical Engineering, National Cheng-Kung University, Taiwan, 1975

EXPERIENCES:

1990 - present
Associate Professor and Associate Chair
(Assistant Professor: 1990, Associate Professor: 1995, Associate Chair of MMAE: 2006)
Joint Faculty between Department of Mechanical, Materials & Aerospace Engineering
(MMAE) and Institute for Simulation and Training (IST)
University of Central Florida, Orlando, Florida

1995, 1996, 1999, 2000, 2003, and 2005: Summer Faculty, AFRL, Wright-Patterson
AFB, Ohio
1997 and 2001: Summer Faculty, AFRL, Rome, New York
2002: Summer Faculty, US Army TACOM, Warren, Michigan

HONORS AND AWARDS

2003 Department of Mechanical, Materials & Aerospace Engineering Excellence in
Undergraduate Teaching Award

2003 College of Engineering and Computer Science (CECS) Excellence in
Undergraduate Teaching Award

CURRENT RESEARCH PROJECTS

Selected list as the Principal Investigator (PI) or Co-PI:
1. "Lunar Exploration Hardware Development", Earthrise Space, Inc., and I-4
   Corridor matching, $600K, 2011 ~ on going.
2. "Power-generation buoy and deep-sea monitoring system", Harris Corp., $50K,
   2010 ~ on going.

PAST RESEARCH PROJECTS

Selected list as the Principal Investigator (PI) or Co-PI:
1. "Planning Grant: I/UCRC for Joining the Advanced Small Satellite Technologies Research and Education Center", NSF, $13K, 2009 ~ on going.
2. "KNIGHTSAT II: Explorer for a Gossamer Technology and a Novel Health-monitoring/tracking System", AFOSR, $110K, 2 years.
3. "Technical Support and Coordination of The Sixth FUNSAT Design Competition", FSGC, $25K, 1 year.
4. "Development of an Innovative Propellantless Propulsion System for LEO Satellites", FSGC, $25K, 1 year.
5. "Wave Power Generator", Florida Energy Systems Consortium, $150K, 2 years.
6. "Benchmark Numerical Toolkits for High Performance Computing", NASA STTR, Phase I, Intelligent Automation, Inc., $30K to UCF, 1 year.
7. "Study the Critical States of the Large Human-Robot System", US Army Research Laboratory, $37K, 1 year.
8. "Modeling and Simulation of Out-of-Control Rockets for Range Safety", NASA KSC, $25K, 1 year.
9. "Probabilistic Modeling of the CNT-PNC Based Sensor", IST in-house grant, $5K, 6 months.
10. "Modeling and Simulation of Out-of-Control Rockets for Range Safety ", Space Research Initiative, $80K, 2 years.
11. "Distributed Collaborative Decision Support Technologies - Automated Decision Support Study", AFRL through SAIC, $15K, 1 year.
12. "AEE Functionality Methods and Tools Baseline", NASA through ASRC Aerospace Corporation, $17K, 1 year.
13. "Automatic Decision Support Study", AFRL through SAIC, $29K, 1 year.
14. "Space Mission Enhancements via Autonomous Robotic Systems", UF-UCF SRI, $80K, 1 year.
15. "Deployable 3D Trauma Training Center: Modules One and Two", STRICOM/NAWCTSD, $200K, 1 year.
16. "Workshop in Fostering Innovation in Command, Control and Intelligence Technology", AFRL, $25K, 6 months.
17. "Development of a Projection Head-Mounted Display for Integration with the Mannequin for the Military Medics II", STRICOM/NAWCTSD, $315K, 2 years.
18. "Interoperability Testbed of Synchronous Parallel Environment for Emulation and Discrete-Event Simulation (SPEEDES)", SAIC, $20K, 1 year.
19. "Simulation of a Swarm of UCAV's", AFRL, $10K, 1 year.
20. "3-D Dynamic Anatomy: Virtual Reality Prototype", NIH, $500K, 5 years.
21. "Automatic Program Partitioning Study", SAIC, $20K, 1 year.
22. "Development of a Projection Head-Mounted Display for Integration with the Mannequin for the Military Medics", STRICOM/NAWCTSD, $190K, 1 year.
23. "Spray Cooling for Computer Applications", Sun Microsystems, $56K, 1 year.
24. "Research on a Soft-Touch/Multi-Arm Robotic System", I-4 Matching, $50K.
25. "An Electrical Motion Platform", Presidential Initiative to Fund Major Research Equipment project, $52K.

26. "Distributed Web Simulation", AFOSR, $25K, 1 year.
27. "Vibration and Particle Measurement of the PST MGTL", BCC $22K, 1 year.
28. "Development of an MEMS-Based Motion Testing System for Open-Access Cleanroom at BCC", USDC $45K, 1 year.
29. "Standard Software Architecture for Reconfigurables (SSAR) Project", Veda, $8K, 1 year.
30. "Development of Improved Dead Reckoning Algorithms for Distributed Interactive Simulation", $600K, 3 years.
31. "Pitting Data Correlation", USBI, 10K, 1 year.
32. "Mathematical Testbed for System Controller Development—M1 Tank Modeling", GD Land Div., $10K, 1 year.
33. "Helicopter Rotor Model", Loral, $100K, 2 years.

PUBLICATIONS:

[1]   Lin, K. C., Chen, C. K., Weng, C. I., "Sliding Bearing with a Convex Pad Surface for Micropolar Fluids", *Proceedings of 2nd Annual Meeting of Society of Theoretical and Applied Mechanics (STAM) of ROC*, 1978, Tainan, Taiwan.

[2]   Howe, R. M., Lin, K. C., "The Use of Function Generation in the Real-time Simulation of stiff systems", *Proceedings of the AIAA Flight Simulation Technologies, Dayton*, OH, September 1990, pp. 217-224.

[3]   Lin, K. C., Howe R. M., "The Use of Staggered Integration Steps in the Simulation of Dual-Speed Systems", *Proceedings of the 1991 Simulation Multiconference*, New Orleans, LA, April 1991, pp. 409-414.

[4]   Lin, K. C., Howe R. M., "A New Approach to the Real-time Simulation of Control Systems with Discontinuities", *Proceedings of the 1991 American Control Conference*, Boston, MA, June 1991, pp. 2122-2127.

[5]   Lin, K. C., Howe R. M., "Speed and Memory Requirements for Different Methods of Multivariable Function Generation in Real-Time", *Proceedings of the 1991 Summer Computer Simulation Conference*, Baltimore, MD, July 1991, pp. 252-256.

[6]   Goldiez, B, Lin, K. C., "Representation of Vehicle Orientation in Networked Simulation", *Proceedings of the AIAA Flight Simulation Technologies Conference*, New Orleans, LA, August 1991, pp. 271-276.

[7]   Lin, K. C., Howe R. M., "A Series of Modified Predictor Algorithms", *Proceedings of the Simulation Technology Conference International*, Orlando, FL, October 1991, pp. 106-110.

[8]   Bergsneider, C., Lin, K. C., Browder, B., "Reusable Helicopter Modeling for Simulation", *Proceedings of the 1992 Simulation Multiconference*, Orlando, FL, April 1992, pp. 47 - 51.

[9]   Lin, K. C., "Using System Identification to Improve the Performance of a Low-Cost Flight Simulator", *Proceedings of the 1992 American Control Conference*, Chicago, IL, June 1992, pp. 1539 - 1543.

[10] Lin, K. C., "Dead-Reckoning in Distributed Interactive Simulation" *Proceedings of the Third Annual Conference of the Chinese-American Scholars Association of Florida*, Miami, FL, June 1992, pp. 1 - 5.

[11] Goldiez, B, <u>Lin, K. C.</u>, Ng, H., "Orientation Representation for Vehicles in Distributed Interactive Simulation", *Position Paper 92-29, The Seventh Workshop on the Standard for the Interoperability of Defense Simulation*, Orlando, FL, September 1992, pp. A53 - A56.

[12] <u>Lin, K. C.</u>, Howe, R. M., "Real-Time Simulation of Stiff Systems Using Function Generation", *International Journal in Computer Simulation*, Vol. 3, No. 1, pp. 43-59 (1993).

[13] <u>Lin, K. C.</u>, Ng, H., "Coordinate Transformation in Distributed Interactive Simulation", *Proceedings of the 1993 Simulation Multiconference*, Arlington, VA, March 1993, pp. 459 - 463.

[14] Pickerine, J. A., <u>Lin, K. C.</u>, Lisle, C. R., Guruprasad, G., "Reusable Code Structures for Simulation", *Proceedings of the 1993 Simulation Multiconference*, Arlington, VA, March, 1993, pp. 434 - 439.

[15] <u>Lin, K. C.</u>, Howe, R. M., "Real-Time Simulation of Control Systems with Discontinuities", *Journal of Control Systems and Technology*, Vol. 1, No. 2, pp. 155-161 (1993).

[16] <u>Lin, K. C.</u>, Goldiez, B, Ng, H., "Representation of Vehicle Location in Networked Simulations", *Proceedings of the AIAA Flight Simulation Technologies Conference*, Monterey, CA, August 1993, pp. 222-226.

[17] <u>Lin, K. C.</u>, Lu, P., Smith, M., "The Numerical Errors in Inverse Simulation", *Proceedings of the AIAA Flight Simulation Technologies Conference*, Monterey, CA, August 1993, pp. 251-256.

[18] Pickerine, J. A., <u>Lin, K. C.</u>, Lisle, C. R., Guruprasad, G., "Reusable Code for Helicopter Simulation", *Proceedings of the AIAA Flight Simulation Technologies Conference*, Monterey, CA, August 1993, pp. 281-288.

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[20] <u>Lin, K. C.</u>, Ng, H., "Coordinate Transformation in Distributed Interactive Simulation", *Simulation*, Vol. 61, No. 5, 1993, pp. 326-331.

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[22] <u>Lin, K. C.</u>, Howe, R. M., "Simulation Using Staggered Integration Steps, Part I: Intermediate-Step Predictor Methods", *Trans. of the Society for Computer Simulation*, Vol. 10, No. 3, 1993, pp. 153-164.

[23] <u>Lin, K. C.</u>, Howe, R. M., "Simulation Using Staggered Integration Steps, Part II: Implementation on Dual-Speed Systems", *Trans. of the Society for Computer Simulation*, Vol. 10, No. 4, 1993. pp. 285-297.

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[33] Lin, K. C., "Dead reckoning and Distributed Interactive Simulation", *Proceedings of SPIE's International Symposium on Aerospace, CR58*, Orlando, FL, April 1995, pp. 16-36.

[34] Wang, J., Lin, K. C., Yeh, J., "Application of Digital Image Processing Techniques in Corrosion Pitting Evaluation" *Proceedings of the Sixth Annual Conference of the Chinese-American Scholars Association of Florida*, Boca Raton, FL, June, 1995, pp. 11 - 18.

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