John Y. Hung

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Department of Electrical & Computer Engineering
200 Broun Hall
Auburn University, AL 36849
(334) 844-1813

EDUCATION

Doctor of Philosophy, Electrical Engineering
University of Illinois Urbana-Champaign, Urbana, IL — May 1989
Dissertation – Nonlinear Control of Flexible Joint Manipulators

Master (MEE), Electrical Engineering
Princeton University, Princeton, NJ — May 1981

Bachelor of Science, Electrical Engineering
University of Tennessee, Knoxville, TN — December 1979

PROFESSIONAL EXPERIENCE

Auburn University
Professor — 2006 - present
Associate Professor — 1994 - 2006
Assistant Professor — 1989 - 1994

- Average allocation of time and effort over the past four years: 70% instruction, 10% research, 20% service.
- Teaching both undergraduate and graduate courses every semester of the academic year.
- Principal investigator for over $2.3M+ research, 2005-2014.
- Graduate students completed: 7 Ph.D, 25 Masters (thesis), 4 Masters (non-thesis).
- Graduate students currently advising: 3 Ph.D, 1 Master (thesis).
- ECE Graduate Program Officer, liaison to the AU Graduate School, chair of the 10-person ECE graduate policy & admissions committee.
- Chair of the ECE laboratory committee, which develops and maintains six core laboratories in the undergraduate degree programs.
- Member of ECE curriculum committee since 1993. Helped develop new curriculum models that took effect in Fall 1997, and redesigned again for the semester calendar effective Fall 2000. Wrote portions of ABET self-study reports for 1998, 2004, 2010, and 2016 reviews.
- Developed four graduate courses, all still being taught on a two-year rotation:
  - ELEC 7500: linear systems analysis and design
  - ELEC 7520: advanced digital control systems
  - ELEC 7560: nonlinear systems analysis and design
  - ELEC 8560: adaptive control systems

National Taiwan University of Science & Technology ("Taiwan Tech")
Visiting Professor 2009-2010

- Taught four graduate courses and conducted research with graduate students.
- Delivered invited presentations at four universities in Taiwan: National Taiwan University, National Cheng Kung University, Ming Chi University, Taiwan Tech.

PolyAnalytics, Inc.
Engineering consultant, Knoxville, TN part time 1984 – 1989

- Developed high precision motion control systems for U.S. government projects.

Johnson Controls, Inc. 1981-1984
Building Automation Systems Division, Milwaukee, WI

- Design and development engineer. Implemented control system algorithms used in the company's first digital controller for commercial building heating, ventilation, and air conditioning systems.

MEMBERSHIPS

Institute of Electrical & Electronics Engineers (IEEE), since 1978.
IEEE Board of Directors, elected by IEEE Division VI, 2017-2018.
President, IEEE Industrial Electronics Society, 2014, 2015.
Faculty Advisor, Auburn Amateur Radio Club (K4RY)
Faculty Advisor, Cru (formerly Campus Crusade)
Tau Beta Pi – engineering honor society
Eta Kappa Nu – electrical engineering honor society
Phi Kappa Phi – academic honor society
Lakeview Baptist Church, Auburn
Boy Scouts of America (BSA), Troop 371
Chair, Saugahatchee district (Lee County) BSA Eagle Scout committee
Auburn Outing Club

HONORS

Publication Awards

1. Best Paper Award for 2010 IEEE Industrial Electronics Magazine: M. Liserre, T. Sauter, and J. Y. Hung, "Future energy systems: Integrating renewable energy sources into the smart power grid through industrial electronics," *IEEE Industrial Electronics Magazine*, vol. 4, no. 1, pp. 18–37, March 2010. Awarded at 2011 IEEE Annual Conference of the Industrial Electronics Society, Melbourne, Australia, November 2011.
2. (From Okyay Kaynak, past Editor-in-Chief of IEEE Transactions on Industrial Informatics, past Editor-in-Chief of IEEE/ASME Transactions on Mechatronics, dated 22 January 2007. . .)
   "Hello to all;

I am not sure whether you are aware of a new index (of authors, publications, institutions, etc.), used by Web of Science, called h-index. It may be considered as being much more meaningful than other types of figures, such as the number of citations received (by an author, a publication, an institution, etc.). I was curious to check how T-IE is doing and here is the first page. So, the h-index of our publication is 35 and in terms of citations received, John Hung et al.'s 1993 article leads the field by a very large margin. In fact more than 8% of all the citations T-IE (and T-IECI) has ever received is due to this publication. I would like to publicly applaud him for this.

Best regards.

Okyay"

3. Second Place in the 2003 Technical Paper Competition, Alabama Section of IEEE:
   J. Y. Hung, N. G. Albritton, and F. Xia, "Nonlinear control of a magnetic bearing system," *Mechatronics (Pergamon Press)*, vol. 13, no. 6, pp. 621–637, July 2003.
4. Outstanding Paper Award for 1997 IEEE Transactions on Industrial Electronics:
   T. Gupta, R. R. Boudreaux, R. M. Nelms, and J. Y. Hung, "Implementation of fuzzy controller for dc-dc converters using an inexpensive 8-bit microcontroller," *IEEE Transactions on Industrial Electronics*, vol. 44, no. 6, pp. 661–669, October 1997.
5. Second Place in the 1993 Technical Paper Competition, Alabama Section of IEEE:
   J. Y. Hung, R. M. Nelms, and P. Stevenson, "An output feedback sliding mode speed regulator for dc drives," in *Proceedings of 8th Annual IEEE Applied Power Electronics Conference and Exposition*, San Diego, CA, March 1993, pp. 340–346.

Teaching Awards

1. William F. Walker Merit Teaching Award, Auburn University, 18 March 2005.
2. Fred H. Pumphrey Teaching Award, College of Engineering, Auburn University, 27 April 2001.
3. Outstanding Faculty Member Award from the student body of the Department of Electrical and Computer Engineering, Auburn University, 27 April 2001.
4. SGA (Student Government Association) Outstanding Faculty Member Award for the College of Engineering, Auburn University, 10 April 2001.
5. Outstanding Faculty Member Award from the student body of the Department of Electrical and Computer Engineering, Auburn University, 1997.

Other Honors and Awards

1. Plenary Speaker, 2017 IEEE International Conference on Mechatronics, Melbourne, Australia, February 2017.
2. Member, IEEE Board of Directors (2017, 2018). Almost 400,000 members worldwide.
3. President, IEEE Industrial Electronics Society (2104, 2015). Over 6,000 members worldwide.
4. Plenary Speaker, 10th IEEE International Conference on Industrial Electronics and Applications (ICIEA-2015), Auckland, New Zealand, June 2015.

5. IEEE Fellow (elected 2011). Citation: For contributions to control technology for industrial electronics.
6. Visiting Professor, National Taiwan University of Science and Technology, Aug. 2009-July 2010 (12 months). Fully supported by Taiwan's National Science Council.
7. Plenary speaker, "Integrating Alternative Energy Sources: Opportunities for Industrial Electronics," Primer (1st) Congreso Internacional de la Industria Eléctrica y Electrónica, AIE (Association for Industrial Electronics) Expo 2007, Santiago, CHILE (24 October 2007).
8. Professional Improvement Leave (Summer 1999-Summer 2000) – conducted research on automotive power steering control systems and power electronic systems for Visteon Corp. (Dearborn, MI).
9. American Society for Engineering Education (ASEE)/National Aeronautics & Space Administration (NASA) Summer Faculty Fellow, Summer 1997 – to develop and test nonlinear control algorithms for telescope pointing using rotating unbalanced masses, NASA Marshall Space Flight Center, AL.
10. ASEE/NASA Summer Faculty Fellow, Summer 1996 – to develop and test linear control algorithms for telescope pointing using rotating unbalanced masses, NASA Marshall Space Flight Center, AL.
11. Nominated for the Birdsong Excellence in Teaching Awards, 1993, 1994.
12. Invited speaker at the IEEE International Neuro-Fuzzy Control Workshop, Muroran, Hokkaido, JAPAN, March 1993.
13. Summer faculty researcher, U.S. Navy, Naval Underwater Systems Center, Newport, Rhode Island, summer1991 and summer 1992.
14. Two U.S. Patents:
    - #6,429,561 issued Aug. 6, 2002.
    - #5,392,881 issued Feb. 28, 1995.
15. Academic honor society memberships
    - Phi Kappa Phi: service & academic honor society (1979)
    - Tau Beta Pi: engineering honor society (1978)
    - Eta Kappa Nu: electrical engineering honor society (1978)

OTHER SERVICE IN THE PROFESSION

Dr. Hung is an active Fellow member of the Institute of Electrical and Electronics Engineers (IEEE), the world's large professional organization (nearly 400,000 members), and will serve on the Board of Director (2017, 2018). Prior to this he held numerous responsibilities in the IEEE Industrial Electronics Society, which has nearly 7,000 members worldwide. His service activities in IEEE include: conference technical program management, conference organization, associate and special editorships, financial management, and leadership. His IEEE activities have been conducted across the U.S.A., Europe, and Asia, where he has presented research findings, invited presentations, and tutorials. From fall 2009 - spring 2010, Prof. Hung conducted teaching and research as Visiting Professor at National Taiwan University of Science & Technology ("Taiwan Tech"). A list of service activities in professional organizations is detailed below.

1. **Director**, IEEE Board of Directors, January 2017 to December 2018. Elected by IEEE Division VI members.
2. **President**, IEEE Industrial Electronics Society, January 2014 to December 2015.
3. **President-Elect**, IEEE Industrial Electronics Society, January 2012 to December 2013.
4. **Vice-President for Conference Activities**, IEEE Industrial Electronics Society, Chair of IES Conference Board, January 2008 to December 2010 (three years).
5. **Treasurer**, IEEE Industrial Electronics Society, Chair of IES Finance Committee, January 2002 to December 2007 (six years).
6. **Life AdCom member**, IEEE Industrial Electronics Society, since 2014. Previously Life AdCom member (2010-2013). AdCom member: 2000-2001 (two years).
7. **Conference General Chair (or Co-Chair)**
   (a) Chair: 25th IEEE International Symposium on Industrial Electronics (ISIE-2016), Santa Clara, CA, June 8-10, 2016.
   (b) Co-Chair: 39th Annual Conference of the IEEE Industrial Electronics Society (IECON-2013), Vienna, AUSTRIA, November 2013, over 1000 papers.
   (c) Co-Chair: 22nd IEEE International Symposium on Industrial Electronics (ISIE-2013), Taipei, TAIWAN, 28-31 May 2013.
   (d) Honorary Chair: 2013 IEEE International Conference on Industrial Electronics (ICIT-2013), Capetown, SOUTH AFRICA, 25-27 February 2013.
   (e) Co-Chair: 2011 Joint IEEE International Conference on Industrial Technology (ICIT-2011) & 43rd Southeastern Symposium on System Theory (SSST-2011), Auburn, AL, 14-17 March 2011.
   (f) Co-Chair: 2010 IEEE International Symposium on Industrial Electronics (ISIE-2010), Bari, ITALY, 4-7 July 2010.
   (g) Chair: 34th Annual Conference of the IEEE Industrial Electronics Society (IECON-2008), Orlando, FL, 8-11 November, 2008. Over 700 registrants, 584 papers.
8. **Conference Technical Program Co-Chair**
   (a) 2017 IEEE International Conference on Mechatronics (ICM-2017), Melbourne, AUSTRALIA.
   (b) 2011 IEEE International Conference on Mechatronics (ICM-2011), Istanbul, TURKEY.
   (c) 36th Annual Conference of the IEEE Industrial Electronics Society (IECON-2010), Glendale, AZ.
   (d) 2010 IEEE International Conference on Industrial Technology (ICIT-2010), Vina del Mar, CHILE.

(e) 2007 IEEE International Symposium on Industrial Electronics (ISIE-2007), Vigo, SPAIN.
(f) 32nd Annual Conference of the IEEE Industrial Electronics Society, Paris, FRANCE (IECON-2006), November 2006.
(g) 2000 IEEE International Symposium on Industrial Electronics (ISIE-2000), Puebla, MEXICO.
(h) 2000 IEEE International Conference on Industrial Technology (ICIT-2000), Goa, INDIA.

9. **Conference Technical Track co-Chair**

(a) Control Systems, Computational Intelligence, and Applications, 2012 IEEE International Symposium on Industrial Electronics, Hangzhou, CHINA (ISIE-2012).
(b) Control Systems, 37th Annual Conference of the IEEE Industrial Electronics Society, Melbourne, AUSTRALIA (IECON-2011).
(c) Computer and Control Systems, 33rd Annual Conference of the IEEE Industrial Electronics Society, Taipei, TAIWAN (IECON-2007).
(d) Computer and Control Systems, 2005 IEEE International Conference on Industrial Technology (ICIT-2005), Hong Kong.
(e) Computer and Control Systems, 31st Annual Conference of the IEEE Industrial Electronics Society (IECON-2003), Raleigh, NC.
(f) Computer and Control Systems, 2004 IEEE International Sympoium on Industrial Electronics (ISIE-2004), Ajaccio, Corsica, FRANCE.
(g) Computer and Control Systems, 28th IEEE Annual Conference of the IEEE Industrial Electronics Society (IECON-2002), SPAIN.
(h) Signal Processing and Control, 24th Annual Conference of the IEEE Industrial Electronics Society (IECON-1998), Aachen, GERMANY.
(i) Signal Processing and Control, 23rd Annual Conference of the IEEE Industrial Electronics Society (IECON-1997), New Orleans, LA.

10. **Conference Finance Chair**

(a) 2013 IEEE International Conference on Mechatronics (ICM-2013), Vicenza, ITALY.
(b) 35th Annual Conference of the IEEE Industrial Electronics Society (IECON-2009), Porto, PORTUGAL.
(c) 3rd IEEE Digital Ecosystems and Technologies Conference (DEST-2009), Istanbul, TURKEY.
(d) 2009 IEEE International Conference on Industrial Technology (ICIT-2009), Churchill, Victoria, AUSTRALIA.
(e) 2008 IEEE International Symposium on Industrial Electronics (ISIE-2008), Cambridge, UK.
(f) 2nd IEEE Digital Ecosystems and Technologies Conference (DEST-2008), Phitsanulok, THAILAND.
(g) IEEE Digital Ecosystems and Technologies Conference (DEST-2007), Cairns, Australia.
(h) 4th IEEE International Conference on Industrial Informatics (INDIN-2006), Singapore, SINGAPORE.
(i) 2005 IEEE International Conference on Industrial Technology (ICIT-2005), Hong Kong.
(j) 3rd IEEE International Conference on Industrial Informatics (INDIN-2005), Perth AUSTRALIA (co-chair).

(k) 2004 IEEE International Conference on Industrial Technology, Hammamet, TUNISIA
(l) 29th Annual Conference of the IEEE Industrial Electronics Society (IECON-2003), Roanoke, VA, 2003.
(m) 2003 IEEE International Symposium on Industrial Electronics, Rio de Janiero, BRAZIL.
(n) 28th IEEE Annual Conference of the IEEE Industrial Electronics Society (IECON-2002), Sevilla, SPAIN, 2002.
(o) 27th IEEE Annual Conference of the IEEE Industrial Electronics Society (IECON-2001), Denver, CO, 2001.

11. **Journal Associate Editorships**

(a) *IEEE Transactions on Industrial Electronics*, August 1996 - Dec 2005.
Recipient of award: *"Recognition for Exceptional Contributions to the IEEE Transactions on Industrial Electronics,"* IEEE Industrial Electronics Society, November 1995.
(b) *IEEE Transactions on Control Systems Technology*, Jan 1997-Dec 1998.

12. **Journal Guest Editorships**

(a) J. J. Rodriguez-Andina and J. Y. Hung, "Guest editorial: Special Section on the 2007 IEEE International Symposium on Industrial Electronics," *IEEE Transactions on Industrial Electronics*, vol. 55, no. 9, pp. 3178–3179, September 2008.
(b) J. Y. Hung and S. T. Hung, "Guest editorial: Special section on automotive electronic systems," *IEEE Transactions on Industrial Electronics*, vol. 51, no. 2, pp. 254–256, April 2004.
(c) J. Y. Hung, "Guest editorial: Special section on micromachine research," *IEEE Transactions on Industrial Electronics*, vol. 42, no. 5, pp. 421–422, October 1995.
(d) J. Y. Hung and R. B. Tilove, "Guest editorial: Special section on industrial robotics," *IEEE Transactions on Industrial Electronics*, vol. 41, no. 1, pp. 1–3, February 1994.

13. **Reviewer** Dr. Hung has served or is serving as reviewer for the following journals and publications:

(a) *IEEE Transactions on:* (alphabetical order)
- *Control Systems Technology* (1989-2000)
- *Fuzzy Systems* (1998-2002)
- *Industry Applications* - since 1994
- *Industrial Electronics* - since 1990
- *Robotics and Automation* (1992-1998)

(b) *IEEE Industrial Electronics Magazine* - since 2015
(c) *MDPI Sensors* - since 2014
(d) *Journal of Robotic Systems* - since 1998
(e) *Mechatronics* (Pergamon Press) - since 1995
(f) *Automatica* - 1998-2000
(g) *IEE (IET) Proceedings Control Theory & Application* - since 1995
(h) *IEE (IET) Proceedings Electric Power Applications* - since 2000
(i) IEEE Press (1993-1998)

PUBLICATIONS

Book Chapters

1. T. Chang and J. Y. Hung, *The Industrial Electronics Handbook*. CRC Press, 2010, ch. Digital Control, p. 10.
2. J. Y. Hung, *The Industrial Electronics Handbook*. CRC Press, 1997, ch. The Smith Predictor Technique, pp. 511–512.
3. J. Y. Hung and V. Trent, *The Industrial Electronics Handbook*. CRC Press, 1997, ch. Digital Control, pp. 553–558.

Article-length Publications

In Refereed Journals

1. C. Li, H. Yang, L. L. Jenkins, R. N. Dean, G. T. Flowers, and J. Y. Hung, "Enhanced-performance control of an electromagnetic solenoid system using a digital controller," *appearing in IEEE Transactions on Control Systems Technology*, vol. 24, no. 5, p. 7, September 2016.
2. C. Li, R. N. Dean, J. Y. Hung, and G. T. Flowers, "Feedback posicast control of micromachined electrostatic actuators," *IE Micro & Nano Letters*, p. 5 pp., July 2016.
3. P. Pan, T. McDonald, B. Via, J. Fulton, and J. Y. Hung, "Predictiong moisture content of chipped pine samples with a multi-electrode capacitance sensor," *Biosystems Engineering*, 2015.
4. S. He, J. Y. Hung, and R. M. Nelms, "Small signal modeling of i^2 average current mode control," *appearing in IEEE Transactions on Power Electronics*, p. 10, 2015.
5. J. M. Wooten, D. M. Bevly, and J. Y. Hung, "Piezoelectric polymer-based collision detection sensor for robotic applications," *Electronics (MPDI)*, no. 4, pp. 204–221, 2015.
6. X. Yu and J. Y. Hung, "Minimizing wasted travel in coverage path planning," *in review for IEEE Transactions on Robotics*, p. 8, October 2013.
7. ——, "A shortest closed path for a Dubins vehicle through a set of neighborhoods," *in review for IEEE Transactions on Robotics*, p. 8, October 2013.
8. K. Nyugen-Duy, T.-H. Liu, D. F. Chen, and J. Y. Hung, "Improvement of matrix converter drive reliability by online fault detection and a fault-tolerant switching strategy," *IEEE Transactions on Industrial Electronics*, vol. 59, no. 1, pp. 244–256, January 2012.
9. L. Guo, J. Y. Hung, and R. Nelms, "Comparative evaluation of sliding mode fuzzy controller and PID controller for a boost converter," *Electric Power Systems Research*, vol. 81, no. 1, pp. 99 – 106, Jan 2011.
10. L. Guo, J. Y. Hung, and R. M. Nelms, "Evaluation of DSP-based PID and fuzzy controllers for dc-dc converters," *IEEE Transactions on Industrial Electronics*, vol. 56, no. 6, pp. 2237–2248, June 2009.

11. M. Lashley, D. M. Bevly, and J. Y. Hung, "Vector tracking algorithms for weak GPS signals in high dynamics," *IEEE Journal of Selected Topics in Signal Processing*, vol. 3, no. 4, pp. 661–673, August 2009.
12. L. Márton, A. S. Hodel, B. Lantos, and J. Y. Hung, "Underactuated robot control: Comparing LQR, subspace stabilization, and combined error metric approaches," *IEEE Transactions on Industrial Electronics*, vol. 55, no. 10, pp. 3724–3730, October 2008.
13. R. N. Dean, G. Flowers, R. Horvath, N. Sanders, A. S. Hodel, J. Y. Hung, and T. A. Roppel, "Characterization and experimental verification of the nonlinear distortion in a technique for measuring the relative velocity between micromachined structures in normal translational motion," *IEEE Sensors Journal*, vol. 7, no. 4, pp. 496–561, April 2007.
14. A. S. Hodel and J. Y. Hung, "A state estimator with reduced sensitivity to sensor quantization," *Systems & Control Letters*, in review January 12 2006.
15. Q. Feng, R. M. Nelms, and J. Y. Hung, "Posicast-based digital control of the buck converter," *IEEE Transactions on Industrial Electronics*, vol. 53, no. 3, pp. 759–767, June 2006.
16. M. Long, C.-H. Wu, and J. Y. Hung, "Security models of network-based control systems: Denial of service attacks and counter measures," *IEEE Transactions on Industrial Informatics*, vol. 1, no. 2, pp. 85–96, May 2005.
17. M. Parmar and J. Y. Hung, "Dynamics and sensorless control of a double-pinion electric power steering system," *IEEE Transactions on Industrial Electronics*, vol. 51, no. 2, pp. 290–298, April 2004.
18. J. Y. Hung, N. G. Albritton, and F. Xia, "Nonlinear control of a magnetic bearing system," *Mechatronics (Pergamon Press)*, vol. 13, no. 6, pp. 621–637, July 2003.
19. J. Y. Hung, "Feedback control with Posicast," *IEEE Transactions on Industrial Electronics*, vol. 50, no. 1, pp. 94–99, February 2003.
20. ——, "Parameter identification using sensitivity points: Tutorial and experiment," *IEEE Transactions on Industrial Electronics*, vol. 48, no. 48, pp. 1043–1047, December 2001.
21. K.-K. Shyu, C.-K. Lai, and J. Y. Hung, "Position control of synchronous reluctance motor via totally invariant variable structure controller," *IEEE Transactions on Industrial Electronics*, vol. 48, no. 3, pp. 615–624, June 2001.
22. T. A. Roppel, J. Y. Hung, S. M. Wentworth, and A. S. Hodel, "An interdisciplinary laboratory sequence in electrical and computer engineering: Curriculum design and assessment results," *IEEE Transactions on Education: Special Issue on Assessment*, vol. 43, no. 2, pp. 143–152, May 2000.
23. T. Gupta, R. R. Boudreaux, R. M. Nelms, and J. Y. Hung, "Implementation of fuzzy controller for dc-dc converters using an inexpensive 8-bit microcontroller," *IEEE Transactions on Industrial Electronics*, vol. 44, no. 6, pp. 661–669, October 1997.
Received 1997 Outstanding Paper Award, IEEE Industrial Electronics Society.
24. C. P. Cho, B. K. Fussel, and J. Y. Hung, "A novel integrated electric motor/pump for underwater applications," *AIP Journal of Applied Physics*, vol. 79, no. 8, April 1996.
25. J. Y. Hung, "Magnetic bearing control using fuzzy logic," *IEEE Transactions on Industry Applications*, vol. 31, no. 6, pp. 1492–1497, November/December 1995.

26. ——, "Torque ripple minimization for variable reluctance motors," *Mechatronics (Pergamon Press)*, vol. 4, no. 8, pp. 785–798, December 1994.
27. J. Y. Hung, R. M. Nelms, and P. Stevenson, "An output feedback sliding mode speed regulator for dc drives," *IEEE Transactions on Industry Applications*, vol. 30, no. 3, pp. 691–698, May/June 1994.
28. J. Y. Hung, "Design of the most efficient excitation for a class of electric motor," *IEEE Transactions on Circuits and Systems-I: Fundamental Theory and Applications*, vol. 41, no. 4, pp. 341–344, April 1994.
29. C. P. Cho, B. K. Fussel, and J. Y. Hung, "Detent torque and axial force effects in a dual air-gap axial-field brushless motor," *IEEE Transactions on Magnetics*, vol. 29, no. 6, pp. 2416–2418, November 1993.
30. J. Y. Hung and Z. Ding, "Design of currents to reduce torque ripple in brushless permanent magnet motors," *IEE Proceedings-Part B: Electric Power Applications*, vol. 140, no. 4, pp. 260–266, July 1993.
31. J. Y. Hung, W. B. Gao, and J. C. Hung, "Variable structure control: A survey," *IEEE Transactions on Industrial Electronics*, vol. 40, no. 1, pp. 2–22, February 1993.
One of the top-cited works in this field, cited over 2,200 times since publication.
32. J. Y. Hung and H. V. White, "Precision winding of fiber optic filament-Part I: Winding characteristics," *IEEE Transactions on Industrial Electronics*, vol. 39, no. 3, pp. 258–267, June 1992.
33. ——, "Precision winding of fiber optic filament-Part II: Winding control," *IEEE Transactions on Industrial Electronics*, vol. 39, no. 4, pp. 313–322, August 1992.
34. J. Y. Hung, "Control of industrial robots that have transmission elasticity," *IEEE Transactions on Industrial Electronics*, vol. 38, no. 6, pp. 421–427, December 1991.

Other Articles in Refereed Journals

1. C. Li, R. N. Dean, G. T. Flowers, and J. Y. Hung, "Nonlinear feedback control to enhance stable performance of micromachined electrostatic parallel plate actuators," *International Journal of Automation and Power Engineering (IJAPE)*, vol. 3, no. 1, pp. 49–52, January 2014.
2. E. A. Gonzalez, J. Y. Hung, L. Dorcak, J. Terpak, and I. Petras, "Posicast control of a class of fractional-order processes," *Central European Journal of Physics*, vol. 11, no. 6, pp. 868–880, June 2013.
3. M. Liserre, T. Sauter, and J. Y. Hung, "Future energy systems: Integrating renewable energy sources into the smart power grid through industrial electronics," *IEEE Industrial Electronics Magazine*, vol. 4, no. 1, pp. 18–37, March 2010.
Received 2010 Best Paper Award, IEEE Industrial Electronics Society.
4. J. J. Rodriguez-Andina and J. Y. Hung, "Guest editorial: Special Section on the 2007 IEEE International Symposium on Industrial Electronics," *IEEE Transactions on Industrial Electronics*, vol. 55, no. 9, pp. 3178–3179, September 2008.
5. J. Y. Hung, "Posicast control - Past and present," *IEEE Multidisciplinary Engineering Education Magazine*, vol. 2, no. 1, pp. 7–11, March 2007.

6. W. G. Foshee, III, H. Kirkici, J. Y. Hung, E. K. Blythe, A. Goel, and G. R. Wehtje, "Seedling emergence of smallflower morningglory and green foxtail subjected to a pulsed electric field," *International Journal of Vegetable Science*, vol. 13, no. 1, pp. 61–72, 2007.
7. J. Y. Hung and S. T. Hung, "Guest editorial: Special section on automotive electronic systems," *IEEE Transactions on Industrial Electronics*, vol. 51, no. 2, pp. 254–256, April 2004.
8. J. Y. Hung, "Guest editorial: Special section on micromachine research," *IEEE Transactions on Industrial Electronics*, vol. 42, no. 5, pp. 421–422, October 1995.
9. J. Y. Hung and R. B. Tilove, "Guest editorial: Special section on industrial robotics," *IEEE Transactions on Industrial Electronics*, vol. 41, no. 1, pp. 1–3, February 1994.
10. F. Ghorbel, J. Y. Hung, and M. W. Spong, "Adaptive control of flexible joint manipulators," *IEEE Control Systems Magazine*, vol. 41, no. 7, pp. 9–13, December 1989.

Papers or Lectures

In Proceedings of Professional Meetings

1. T. Wu and J. Y. Hung, "Model predictive control for a tractor-trailer system," in *submitted to 2017 American Control Conference*, Seattle, WA, June 2017.
2. ——, "Adaptive unscented Kalman filter and its application to a tractor-trailer system," in *submitted to 2017 American Control Conference*, Seattle, WA, June 2017, p. 6.
3. X. Yu and J. Y. Hung, "Coverage path planning based on a multiple sweep line decomposition," in *2015 Annual Conference of the IEEE Industrial Electronics Society (IECON-2015)*, Yokohama, Japan, 9-12 November 2015, p. 6.
4. X. Yu, T. A. Roppel, and J. Y. Hung, "An optimization approach of field coverage planning," in *2015 Annual Conference of the IEEE Industrial Electronics Society (IECON-2015)*, Yokohama, Japan, 9-12 November 2015, p. 6.
5. C. Piao and J. Y. Hung, "Analysis and compensation of dead-time effect in direct matrix converters," in *Proceedings of 2015 IEEE International Conference on Technologies for Sustainability (SusTech-2015)*, Ogden, Utah, July 2015.
6. ——, "A novel simplified control strategy to balance dc-link capacitor voltages for multilevel diode clamped VSI based on simplified SVPWM," in *Proceedings of 2015 IEEE International Symposium on Industrial Electronics (ISIE-2015)*, Buzios, Rio de Janeiro, Brazil, June 2015, p. 6.
7. ——, "Analysis and compensation of dead-time effect in multilevel diode clamped VSI based on simplified SVPWM," in *10th IEEE International Conference on Industrial Electronics and Applications*, Auckland, New Zealand, 15-17 June 2015.
8. ——, "A novel SVPWM overmodulation technique for three-level neutral point clamped voltage source inverter," in *2015 IEEE Transportation Electrification Conference and Expo (ITEC-2015)*, Detroit, MI, 14-17 June 2015.
9. ——, "A unified carrier-based modulation method for direct matrix converter," in *2015 IEEE International Conference on Electro/Information Technology (EIT-2015)*, DeKalb, IL, 21-23 May 2015, pp. 122–128.

10. ——, "A carrier-based discontinuous space vector modulation for three-level NPC inverter," in *2015 International Workshop on Integrated Power Packaging (IWIPP-2015)*, 3-6 May 2015, pp. 75–78.
11. ——, "A simplified space vector PWM algorithm for three-level neutral point clamped VSI," in *32nd IEEE Southeastcon Conference*, Ft. Lauderdale, FL, 9-12 April 2015.
12. ——, "A simplified and unified space vector PWM algorithm for multilevel diode clamped VSI," in *Proceedings of 16th IEEE International Conference on Industrial Technology*, Seville, SPAIN, 17-19 March 2015.
13. X. Yu and J. Y. Hung, "Coverage path planning based on a multiple sweep line decomposition," in *2015 Annual Conference of the IEEE Industrial Electronics Society (IECON-2015)*, Yokohama, Japan, 9-12 November 2015, p. 6.
14. C. Li, R. N. Dean, G. T. Flowers, and J. Y. Hung, "Nonlinear feedback control to enhance stable performance of micromachined electrostatic parallel plate actuators," in *4th International Conference on Electrical and Control Engineering (ICECE-2014)*, Indianapolis, IN, 10-11 January 2014, p. 4.
15. J. M. Wooten, D. M. Bevly, and J. Y. Hung, "Robust large-area piezoelectric polymer based collision detection sensor," in *39th Annual Conference of the IEEE Industrial Electronics Society (IECON-2013)*, Vienna, Austria, 10-13 November 2013, pp. 3994 – 3999.
16. J. Salmon, D. M. Bevly, and J. Y. Hung, "Guidance of a robotic off-road tractor-trailer system using model predictive control," in *6th Annual ASME Dynamic Systems and Control Conference (DSCC-2013)*, Palo Alto, CA, October 21-23 2013.
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GRANTS AND CONTRACTS

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2. J. Y. Hung, "Teleoperated Marine Geophysical System - GFE USEMS integration," U.S. Army Corps of Engineers, Sept 2011- December 2013 (27 months), $78 K.
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4. J. Y. Hung, "Robotic DGM Tow Vehicle – Phase III," U.S. Army Corps of Engineers, October 2010- December 2012 (24 months), $1.34 M. (Extended to December 2014).
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20. G.E. Ramey and J.Y. Hung (PI), “Feasibility study of IVHS drifting-out-of-lane alert system,” Transportation Research Board, National Research Council, 2/94-1/95, $88,000.
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25. J. Y. Hung, “Control Technology for Highly Advanced Robots,” A.U. Research Grant-in-Aid, 1/90-12/90, $4,590.

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OTHER INTERESTS

Amateur radio (KI4NHX)
Bible study
Cooking
Ballroom dance – a half-beat off, square dance – except for Yellow Rock
Engine mechanics
Outdoor life: backpacking, camping, canoeing, fishing
Singing in the shower