

CURRICULUM VITAE



PERSONAL INFORMATION

Name: Zhu Kunpeng	Birth: 02/1977	Place of Birth: Hubei, China
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ADDRESS

Technical University of Munich, Faculty of Mechanical Engineering
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EDUCATION

01/2003-07/2007	PhD. National University of Singapore (NUS), Singapore. Specialty: Control and Mechatronics, Department of Mechanical Engineering.
09/1999-07/2002	M.S. Huazhong University of Science and Technology (HUST), Wuhan, China. Specialty: Fluid Machinery and Engineering, School of Power and Energy Engineering.
09/1994-07/1998	B.S. Wuhan University of Science and Technology (WUST), Wuhan, China. Specialty: Mechanical Design and Manufacturing, School of Mechanical Engineering and Automation.

RESEARCH EXPERIENCE

07/2011-present	Alexander Von Humboldt Research Fellow, Institute of Automation and Information Systems, Technical University of Munich, sponsored by Alexander Von Humboldt Foundation, with Prof. Dr.-Ing. Birgit Vogel-Heuser. Project: Informatics in automation, engineering system monitoring and diagnostics/prognostics.
08/2007-06/2011	Research Fellow, Department of Mechanical Engineering, National University of Singapore, sponsored by Engineering Dean's Foundation, with Vice Dean, Prof Loh Han Tong. Project: Design informatics and manufacturing automation.
01/2003-07/2007	PhD study and Research Scholar, Lab of Control & Mechatronics, National University of Singapore, supervised by Prof. Hong Geok Soon and Prof. Wong Yoke San. Project: Condition Monitoring of Micro-Machining Process.
09/1999-07/2002	M.S. study and Research Assistant, Lab of Hydraulic Machinery of Huazhong University of Science and Technology, supervised by Prof. Han Fengqin and Prof. Wei Caixin. Project: Condition Based Maintenance of Hydroelectric Sets, sponsored by National Scientific Foundation.

RESEARCH INTERESTS

1. Intelligent computation in design and manufacturing
2. Precision manufacturing, modeling and control
3. Information retrieval and data mining
4. Signal and image processing, pattern recognition

PROFESSIONAL ACTIVITIES

1. Editorial Board: Journal of Current Development in Theory and Applications of Wavelets, 2010-2013.
2. Associate Editor: IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2008-2010.
3. Program Chair: Intelligent and adaptive learning session, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2010, Taipei.
4. Program Committee: IEEE International Conference on Systems, Man, and Cybernetics: IEEE SMC 2010, 10-13 October 2010, Istanbul, Turkey.

5. Reviewer: Mechanical System and Signal Processing, Neural Networks, IEEE Trans Industrial Electronics, IEEE Tran Industrial Informatics, International Journal of Advanced Manufacturing, Computer Aided-Design, Computer in Industry, etc.
6. Invited Talks: 3D Models Search for Engineering Design Reuse, City University of Hong Kong, July, 2009, Hong Kong, China.
Tool Wear Monitoring in Micro Milling, the Singapore Institute of Manufacturing Technology, October, 2005, Singapore.

REFEREES

Prof. Wong Yoke San, mpewys@nus.edu.sg, National University of Singapore.

Prof. Fuh Y H, Jerry, mpefuhyh@nus.edu.sg, National University of Singapore.

Assoc. Prof. Hong Geok Soon, mpehgs@nus.edu.sg, National University of Singapore.

MAIN PUBLICATIONS

- [1] Zhu K.P., Hong G.S., Wong Y.S. Wang W.H., Cutting Force Denoising in Micro-milling Tool Condition Monitoring, *International Journal of Production Research*, 46(16):4391-4408, 2008.
- [2] Wang W.H., Hong G.S., Wong Y.S., and Zhu K.P., Sensor Fusion for On-line Tool Condition Monitoring in Milling, *International Journal of Production Research*, 45(21): 5095–5116, 2007.
- [3] Zhu K.P., Wong Y.S., Hong G.S., Multi-category Micro-milling Tool Wear Classification with Continuous Hidden Markov Models, *Mechanical System and Signal Processing*, 23 (2009) 547– 560.
- [4] Zhu K.P., Hong G.S., Wong Y.S., Discriminate Feature Selection for Hidden Markov Models in Micro-milling Tool Wear Classification, *Machining Science and Technology*, 12(3): 348-369, 2008.
- [5] Zhu K P, Wong Y.S., Lu W.F., Fuh J Y H, A Wavelet Diffusion Approach for 3-D Model Matching, *Computer-Aided Design*, 41 (2009), pp. 28-36.
- [6] Zhu K.P., Wong Y.S., Hong G.S., Wavelet Analysis of Sensor Signals for Tool Condition Monitoring: A review and Some New Results, *International Journal of Machine Tools & Manufacture*, 49(4): 537–553, 2009.
- [7] Zhu K.P., Hong G.S., Wong Y.S., Multi-Scale Analysis of Cutting Forces for Micro -Milling Tool Wear Monitoring, *IEEE Transactions on Industrial Electronics*, 58(2):2512-2521, 2011.
- [8] Zhu K P, Wong Y S, Lu W. F., Loh H.T., 3D CAD Model Matching with 2D Affine Invariant Features, *Computer in Industry*, 61 (2010) 432–439.
- [9] Zhu K.P., Han F.Q., and Zeng F.S, Knowledge Base Design Methods for Automatic Hydroelectric Sets Fault Diagnosis Systems, *Water Resources and Power*, 19(4):67-71, 2001.
- [10] Monograph: Zhu K.P., Tool Condition Monitoring in High Precision Machining, LAP LAMBERT Academic Publishing GmbH& Co. KG Dudweiler Landstraße 99, 66123 Saarbrücken, Germany, 2011.
- [11] Zhu K.P., Wong, Y.S., Hong, G.S. Noise-Robust Tool Condition Monitoring in Micro-milling with Hidden Markov Models, Bhanu Prasad (editor). *Studies in Fuzziness and Soft Computing 226: Soft Computing Applications in Industry*, pp. 23-46, 2008, Springer, USA.
- [12] Zhu K.P., Hong G.S., Wong Y.S., Sequential independent component analysis for cutting forces de-noising in micro-machining tool condition monitoring, in *Advanced Design and Manufacturing in Global Competition*, X. Y. Shao, C. Deng (editors), pp 833-840, January 2005, John Wiley & Sons, USA.
- [13] Zhu K P, Wong Y.S., Loh H. T., Lu W.F., 3D CAD Model Matching with Perturbed Laplacian Spectra, *Computer in Industry*, 62(2011) 1-11.
- [14] Zhu K.P., Hong G.S., Wong Y.S., Compressive Sensing of Cutting Force in Precision Milling Process Monitoring, *IEEE Transactions on Industrial Informatics*, Accepted.
- [15] Zhu K.P., Wong Y.S., Hong G.S., Signal Processing Issues in Precision Manufacturing Monitoring (invited), in *Mechatronics and Manufacturing Engineering: Research and development*, (2011) Woodhead Publishing Reviews: Mechanical Engineering Series No. 1, Edited by J. Paulo Davim, Cambridge, UK.
- [16] Zhu K.P., Loh H. T., Lu W.F., Sparse Coding for Text Dimension Reduction and Retrieval, *IEEE Transactions on Data Engineering and Knowledge Discovery*, Under Revision.
- [17] Zhu K.P., Loh H. T., Lu W.F., Text Dimension Reduction and Retrieval: An Independent Component Analysis Approach, *Information Processing and Management*, Under Review.
- [18] Zhu K.P., Loh H. T., Lu W.F., 3D CAD Models Classification and Search in Mechanical Design, *ASME Journal of Computing and Information Science in Engineering* , Under Review.