Curriculum Vitae

David, Xinyu Kou, Ph.D.

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Personal Born on September 12, 1975, Harbin, China. Married.

Education

Ph.D Mechanical Engineering, CAD/CAM & RP Applications, **The University of Hong Kong**. 2001.12-2005.12.

M.S. College of Precision instrument & Opto-electronic Engineering, **Tianjin University**. 1998.09-2000.06.

B.S. College of Precision instrument & Opto-electronic Engineering, **Tianjin University**. 1994.09-1998.06.

Working Experience

2010.03 -2010.09	Visiting research fellow at Sibley School of Mechanical and Aerospace Engineering, Cornell University
2007.07 -2010.02	Postdoctoral research fellow at Department of Mechanical Engineering, The University of Hong Kong
2005.12-2007.06	Research associate at Department of Mechanical Engineering, The University of Hong Kong

Awards and fellowship

- Doris Zimmern HKU-Cambridge Hughes Hall Fellowship, 2010
- The winner of the Hong Kong ICT Awards 2007: Best Innovation and Research, Best Innovation Certificate of Merit, Project: "CAD4D: A Novel CAD system for design in 4D space"
- Postdoctoral research fellow**,** Department of Mechanical Engineering, the University of Hong Kong, with Prof. S.T. Tan, 2007
- First class award of mathematical modeling contest, Tianjin City, China, 1997
- Second class award of national mathematical modeling contest, China, 1997

Patents of invention

- CN1450380A, Optical targets with back lighting LCD illuminations, Xinyu Kou, Zhong Wang and Fajie Duan, 2003
- CN1349088A, A pressure visualization gauge, Zhong Wang, Chengnian Ji, Xinyu Kou, Xiaojing Wu

and Yiyan Fan, 2002

Committee Appointment

- Local Arrangement Chairs for 2009 IEEE International Conference on Virtual Environments, Human-Computer Interfaces and Measurement Systems, Hong Kong. 2009.
- Local Arrangement Chairs for 2009 IEEE International Conference on Computational Intelligence for Measurement Systems and Applications, Hong Kong. 2009.

Selected publications

1. **X. Y. Kou** and S. T. Tan, "A Simple and Effective Geometric Representation for Irregular Porous Structure Modeling", *Computer-Aided Design*, accepted, 2010.
2. **X. Y. Kou,** Sukui Xue and S. T. Tan "Knowledge-guided inference for voice-enabled CAD", *Computer-Aided Design*, vol. 42, no. 6 pp.545-557, 2010
3. **X.Y. Kou** and S.T. Tan, "An XML implementation for data exchange of heterogeneous object models", *Book chapter in Advanced Design and Manufacturing based on STEP, Springer London*, pp 419-438, 2010
4. **X.Y. Kou**, X.C. Liu, and S.T. Tan, "Quadtree Based Mouse Trajectory Analysis for efficacy evaluation of Voice-enabled CAD", *2009 IEEE International Conference on Virtual Environments, Human-Computer Interfaces and Measurement Systems*, pp. 196-201, Hong Kong, China, 11-13 May 2009
5. Sukui Xue, **X. Y. Kou** and S. T. Tan, "Natural Voice-Enabled CAD: Modeling via Natural Discourse", *Computer-Aided Design and Applications*, 2009. 6(1): p. 125-136.
6. **X.Y. Kou** and S.T. Tan, "Robust and efficient algorithms for rapid prototyping of heterogeneous objects", *Journal of Rapid Prototyping*, vol. 15, No. 1, pp.5-18, 2009
7. **X.Y. Kou** and S.T. Tan, "Heterogeneous Object Design: An Integrated CAX Perspective", *Lecture Notes in Computer Science, Heterogeneous Objects Modeling and Applications,* Editors: Alexander Pasko, Valery Adzhiev, Peter Comninos, pp. 42-59, 2008
8. **X.Y. Kou** and S.T. Tan, "Design by talking with computers", *Computer-Aided Design and Applications*, vol. 5(1-4), pp. 266-277, 2008
9. **X.Y. Kou** and S.T. Tan, "A systematic approach for integrated computer-aided design and finite element analysis of Functionally-Graded-Material Objects", *Journal of Materials and Design*, vol. 28, no. 10, pp.2549, 2007
10. **X.Y. Kou** and S.T. Tan, "Heterogeneous object modeling: a review", *Computer-Aided Design*, vol. 39, no. 4, pp.284, 2007
11. **X. Y. Kou** and S. T. Tan, "Data Structures and Algorithms of Virtual Prototyping of Heterogeneous Objects", *Computer-Aided Design and Application* , Vol. 3, No. 1-4, pp.59, 2006
12. **X.Y. Kou**, S.T. Tan and W.S. Sze, "Modeling complex heterogeneous objects with non-manifold heterogeneous cells", *Computer-Aided Design*, vol. 38, no. 5, pp.457, 2006
13. **X. Y. Kou** and S. T. Tan, "A hierarchical representation for heterogeneous object modeling", *Computer-Aided Design*, vol. 37, pp. 307, 2005
14. **X. Y. Kou**, S. T. Tan, and W. S. Sze, "Relation oriented modeling for heterogeneous object design", *Proceedings of ASME 2005 Design Engineering Technical Conferences*, September 24-28, Long Beach , California USA, 2005
15. **X. Y. Kou** and S. T. Tan, "An interactive CAD environment for heterogeneous object design," *Proceedings of ASME 2004 Design Engineering Technical Conferences*, September 28-October 2, Salt Lake City, Utah USA, 2004

16. **X. Y. Kou** and S. T. Tan, "Representation and Visualization for Heterogeneous CAD models", *Computer-Aided Design and Application* , Vol. 1, No. 1-4, pp.163, 2004
17. **Xinyu Kou**, Zhong Wang, Mingzhou Chen, Shenghua Ye, "A Fully Automatic Algorithm for Region of Interest Location in Camera Calibration", *Optical Engineering*, vol.41, No.6, pp. 1220-1226, June 2002
18. Ye Shenghua, **Xinyu Kou**, Zhong Wang, Mingzhou Chen, "Free-form 3-D profilometry based on adherent mark constraint and epipolar constraint", *Chinese Journal of Scientific Instrument*, China, vol.23, No3, pp.324-327, 330, 2002
19. Zhong Wang, **Xinyu Kou**, Mingzhou Chen, Shenghua Ye, "Study on a precise on-spot calibration method for distributed stereo reference position-setting", *Chinese Journal of Mechanical Engineering*, English version, China, 2002
20. Qiang You, **Xinyu Kou**, Fajie Duan, "Step motor driver based on fuzzy PID control", *Measurement Technique*, China, No.5, 2001
21. **Xinyu Kou**, Zhong Wang, Mingzhou Chen, Jigui Zhu, Guiping Mu, Shenghua Ye, "A Ways-free registration method and its application in 3D data fusion", *Proc. SPIE* Vol. 4553, pp. 280-285, *Visualization and Optimization Techniques*, 2001
22. **Xinyu Kou**, Zhong Wang, Shenghua Ye, "Inspection-Control system software design based on multi-process method and its inter-process communication", *Computer Engineering and Applications*, China, vol.36, No.6, pp.101-103, 2000
23. **Xinyu Kou**, Xiangjun Wang, "Application of CCD super-dimensional principle in 2D opto-electronic Autocollimator", *Measurement Technique*, China, No.7, pp.27-30, 2000
24. **Xinyu Kou**, Zhong Wang, Mingzhou Chen, Zhu Jigui, Mu Guiping, Ye Shenghua, "An advanced precision location system and the establishment on reference frame for large work piece", *Heavy Machinery*, China, No.6, pp.51-53, 2000
25. **Xinyu Kou**, Hongtao Zhang, Fajie Duan, Zhong Wang, Shenghua Ye, "Study on binocular setup of vision robots and its position-setting error", Journal of Central South University of Technology, *Chinese Congress on Robotics '2000*, vol.31, pp.329-333, 2000
26. Xiangjun Wang, **Xinyu Kou**, "Non-contact optical sensor for inside-diameter measurements", *Proc. SPIE* Vol. 3558, pp.288-292, *Automated Optical Inspection for Industry: Theory, Technology, and Applications II*, 1998

Research Interest

- Computer-Aided Design & Manufacturing
- Computational Mechanics
- Finite Element Analysis, Design optimizations
- Computer graphics and 3D visualizations

Research projects

- *Adaptive mesh generation for the finite element analysis of heterogeneous objects*, supported by Competitive Earmarked Research Grants (CERG), Hong Kong, 2009
- *Voice enabled CAD modeling*, No. HKU 7168/08E, supported by Competitive Earmarked Research Grants (CERG), Hong Kong, 2008
- *Voice assisted CAD modeling and system design*, supported by Small Project Funding, The University of Hong Kong, 2007
- *Computer aided modeling of porous objects*, No. HKU 7170/06E, supported by Competitive Earmarked Research Grants (CERG), Hong Kong, 2006

- *Heterogeneous solid modeling using materially defined geometric entities*, supported by Competitive Earmarked Research Grants (CERG), Hong Kong, 2004
- *Study on ways-free image joint technology and large fields on-site inspection,* No. 50075063, sponsored by Natural Science Fund Committee, China
- *Study on Theory and applications of key technology of vision inspection based on image registration*, No.99140, sponsored by Key project fund committee of Ministry of Education, China