

Jason Geng, Ph.D.

Founder and CEO

GENEX Technologies, Inc.

www.genex-tech.com,

10605 Concord Street,

Kensington, MD 20895

Email: Jason.geng@gmail.com

Phone: 301-962-6565x101



Dr. Jason Geng has more than two decades of experience in developing intelligent systems and advanced imaging technologies and has over 80 technical papers and one book published in related areas. Dr. Geng founded Genex Technologies in 1995, focusing on commercializing 3D and 360 advanced imaging products and their applications in various intelligent systems. GENEX invented Rainbow 3D Camera technology for both military and medical imaging applications; GENEX's OmniEye 360-degree video cameras and intelligent surveillance technologies are used in security monitoring and surveillance applications; GENEX is one of leading players in developing advanced 3D facial recognition biometrics systems for homeland defense, airport/port/train security, and anti-terror applications.

GENEX's successes have received various recognitions. GENEX was awarded in 2000 the "Rising Star" award by Deloitte&Touche, honoring Maryland Technology Fast 50 Companies. In 2001, GENEX was ranked #291 by Deloitte&Touche on the lists of Fast 500 Growing companies in US and Canada, and #9 in Maryland Fast 50 companies in 2002. GENEX's achievement in developing and commercializing advanced technologies was underlined by the selection of GENEX to receive prestigious national honors, the Tibbetts Award from the Small Business Administration (SBA). GENEX is also a proud winner of Washington Techway Fast 50 Awards in 2002 honoring the Washing DC metropolitan region's fastest growing tech companies. Genex was ranked #257 by INC magazine in its 2002 INC 500 list. Dr. Jason Geng has been recognized by DARPA as one of the 200 top scientists in US as "Scientist helping America".

Dr. Geng holds 12 issued patents and 32 pending patent applications. He is a senior member of IEEE. He is also a member of SPIE and AIAA. He has served on the Program Committee of *the International Symposium on Robotics and Manufacturing (ISRAM)* since 1992 and *the International Conference on Emerging Technologies* in 1996. He served as an associate editor of *Journal of Intelligent Control and Systems*, and a guest editor of *Journal of Intelligent & Fuzzy Systems*. He is also listed in *Who's Who in America*, and *Who's Who in the East*. He was an adjunct professor in the George Washington University, teaching courses on robotics, machine vision and control system. He received his doctor degree in Electrical Engineering from the George Washington University.

Selected Publications (From Over 80 Papers and one book)

- Geng,Z., "Rainbow 3D Camera - A New Concept for High Speed and Low-Cost 3D Vision", invited paper for special issue on Sensor Fusion of SPIR Journal Optical Engineering Vol.35, No.2, p376, Feb 1996.
- Geng, Z. C. McCullough, "Missile Control Using the Fuzzy CMAC Neural Networks", AIAA Journal of Guidance, Control, and Dynamics, Vol.20, No.3, June 1997
- J. Yang, Z. Geng, "Closed Form Forward Kinematics Solution to a Class of Hexapod Robots", Accepted by the IEEE Transactions on Robotics and Automation, 1997
- Geng,Z.,et al, "Intelligent control system for multi-DOF vibration isolation", J. Intelligent Materials and Structures, Vol. 6. No.6., p 787, Nov. 1995
- Geng,Z., L.Haynes, "Six DOF active vibration control using a Stewart platform", IEEE Transactions on Control System Technologies, Vol.2-1, p45, 1994
- Geng,Z., R. Xu, and W.Shen "Fuzzy CMAC Neural Networks for Fingerprint Classification," Journal of Electronic Imaging, Special Issue on Neural Fuzzy System for Imaging Applications, Vol. 3, July 1997
- Geng, Z, et al, "Experimental Investigation of Active Machine Tool Vibration Control", Proc. Smart Structure and Materials 1996, San Diego, SPIE Vol. 2721, p.373, Feb. 1996
- Geng,Z , "Fuzzy CMAC Neural Networks for Machine Tool Chatter Suppression Applications", Invited paper Journal of Intelligent Automation and Soft Computing, 1996
- Geng,Z. M.Jamshidi, "A learning controller with gain estimator",IEEE Int. Symp.Intelligent Control, VA 1991.
- Geng,Z , L Haynes, "Neural network solution for the forward kinematics problem of a Stewart platform", International Journal of Robotics and Computer-Integrated Manufacturing, 1992.
- Geng,Z., "Fuzzy CMAC Neural Networks", Int. Journal of Intelligent and Fuzzy Systems, Vol.4, 1995, p80-96
- Geng, Z., "A Multiresolution Wavelet Fuzzy Neural Network Architecture", Proc. Southeastern Simulation Conference (SESC'96), Huntsville, Oct. 1996
- U. Petal, Z. Geng, et al, "Self-Organizing Fuzzy CMAC Neural Networks", Proc. Artificial Neural Networks in Engineering (ANNIE '95), St. Louis, Nov, 1995
- Geng,Z , L Haynes, "A 3-2-1 Kinematic configuration of a Stewart platform and its application to 6 DOF pose measurement", International Journal of Robotics and Computer-Integrated Manufacturing, 1994 .
- Lee, J.D. and Geng,Z., "Dynamic Model of flexible Stewart platforms", Int. Journal Computer&Structure, Vol.42, p401, 1993.

- Geng,Z , L Haynes, "Neural network solution for the forward kinematics problem of a Stewart platform", *International Journal of Robotics and Computer-Integrated Manufacturing*, 1992.
- Geng,Z., L. Haynes and R. Carroll , " On the dynamic model and kinematic solution of a class of Stewart Platform", *Journal of Robotics and Autonomous Systems*, Vol.9, p237, 1992.
- Geng,Z , L. Haynes, "Six degree of freedom active vibration isolation using a Stewart platform mechanism", *Journal of Robotic Systems*, Vol. 10, No.5, July 1992.
- Geng,Z., L. Haynes, J.Lee, "Stewart platform as an intelligent structure", *Robotics and Manufacturing --- Recent trends in research, education, and applications*, Vol.4, ASME Press, p 419, 1992.
- Geng,Z. M.Jamshidi, "Learning control of robot manipulators", *Int. J.Expert System Applications*, Vol.4, 1992.
- Geng,Z., R.Carroll, M.Jamshidi, R.Kisner, "An adaptive learning control approach with applications to water tank level control", *Control-Theory and Advanced Tech. (C-TAT)*, Vol.8, No.3, p577 1992.
- Geng,Z., R.Carroll and J.Xie, "On the 2-D model and analysis of learning control for general nonlinear systems", *International Journal of Control*. Vol.52, No.4, 1992.
- Geng,Z., M.Jamshidi, "Learning control system analysis and design", *J. Intelligent&Robotic Syst*, Vol 4, No.1, 1992.
- Geng, Z., "Multiple Degree of Freedom Active Vibration Control Using a Stewart Platform", *Proc. Third Int. Conf. on Adaptive Structure*, San Diego, Nov. 1992
- Geng, Z., "Fuzzy CMAC Neural Networks and their Applications to Active Vibration Control", *Proc. Fourth Int. Conf. on Adaptive Structure*, Germany, Nov. 1993
- Geng, Z., "An Intelligent Control System for Multiple DOF Active Vibration Control", *Proc. Fifth Int. Conf. on Adaptive Structure*, Japan, Nov. 1994
- Geng, Z., "Active Control Approach to Machine Tool Chatter Suppression", *Proc. Sixth Int. Conf. on Adaptive Structure*, Key West, FL, Nov. 1995
- Geng,Z., "A New Model for Iterative Learning Control Systems" *Int. J. Robotics Automation*, Vol.6, No.2, 1991.
- Geng,Z. R.Carroll, M.Jamshidi, R.Kisner, "An adaptive learning control approach with application to water tank level control", *Proc. of 30th IEEE Control and Decision Conference*, Brighton, UK, 1991.
- Geng,Z., L.Haynes, B.K.Wada, "An intelligent control architecture for multiple DOF vibration isolation", *Proc. ASME Winter Annual Meeting 1993*, New Orleans, Nov. 1993
- L.S.Haynes, A.Santucci, Z.Geng, and N.Coleman, "Experiments in Robotic Hand-Eye coordination with rapid prototype development environment", *Vision*, Vol. 7, No.4, 1990.

- Geng,Z, Lee,J.,Carroll,R.,and Haynes,L,"Learning control system design based on 2-D theory---An application for parallel link robot", IEEE Conf.Robotics & Automation, Cincinnati, Ohio,1990
- Geng,Z., R. Carroll and M. Jamshidi,"Learning Control Systems Design : A Case Study for EBR-II Nuclear Reactor", Proc. American Control Conference, San Diego, 1990.
- Geng,Z., R.Carroll ,"On Eigenstructure Assignment of 1-D and 2-D Linear System", J. Control Theory&Applications, 1989.
- Geng,Z., M.Jamshidi,"Expert Learning Control System", Journal of Intelligent & Robotic System, Vol. 3, 1989.
- Geng,Z.,"Intraduction to Modelling,Analysis & Control of Large-Scale System", NAI Press, 1988.
- Geng,Z., R.Carroll, "A New Algorithm for the Eigenstructure Assignment", Electronics Letters, June 1989.
- Geng,Z., C. Shen "Computer Aided Control System Design", Aeronautical Press,1989.(ISBN 7-80046-059-2/TP 006)
- Y. Wang, C. Nguyen, R. Srikanchana, Z. Geng, and M. T. Freedman, "Tactile mapping of Palpable Abnormalities for Breast Cancer Diagnosis," Proc. IEEE Intl. Conf. Robotics and Automation, Detroit 1999.
- Galdino, G, Geng, Z. et al, "Three Dimensional Digital Imaging: The Future of Breast Surgery", Proc. 68 Annual Meeting of American Society of Plastic and Reconstructive Surgery (ASPRS), New Orleans, LA, Oct 23-28, 1999
- Galdino, G., Geng, Z. et al, Three Dimensional Digital Photography: A Potential New technique in Facial Analysis," International Society of Craniofacial Surgery, VIII International Congress, Taipei, Taiwan, Nov., 3, 1999
- Galdino, G.M., Manson, P.N., Nahabedian, M., Chang, B., Zhuang, P., Geng, J.Z., Vander Kolk, C.A., Three Dimensional Photography in Plastic Surgery: Clinical Applications for Breast Surgery. Plastic and Reconstructive Surgery. 110(1):1-13, July 2002
- Hamid Dehghani, Marvin M Doyley, Brian W Pogue, Shudong Jiang, Jason Geng and Keith D Paulsen, Breast deformation modelling for image reconstruction in near infrared optical tomography, SPECIAL ISSUE ON RECENT DEVELOPMENTS IN BIOMEDICAL OPTICS, Physics in Medicine and Biology, No 10, 21 May 2004