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Biography

Fakherdine Keyrouz received his Dr.-Ing. degree in Electrical Engineering with high distinction from the Munich University of Technology (TUM) in 2008. Between 2003 and 2004, he worked as a research engineer at Siemens Mobile Devices in Munich where he developed advanced channel coding techniques for UMTS. During his doctoral studies he coordinated his research projects with several German institutes including the University of the German Armed Forces and the German Aerospace Center. After his doctoral studies, he joined the R&D junior managers program for distinguished researchers at Bosch in Stuttgart, Germany. After Bosch, he joined the faculty of engineering at NDU as Assistant Professor. He was promoted to the Associate Professor rank in 2016. He is a member of the German Association of Engineers, the Lebanese Order of Engineers, and of IEEE. He is an active researcher and a reviewer for several international refereed journals. His research interests include advanced signal processing for humanoid robots, telecommunications, telemedicine, and control strategies for renewable energy systems. Motto: "Research brings dreams to life. Teaching too."

Peer-reviewed Journals

- Keyrouz, F. (2014) Advanced Binaural Sound Localization in 3-D for Humanoid Robots. IEEE Transactions on Instrumentation and Measurement, 63(9), pp. 2098-2107.
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- Keyrouz F. (2016) A Novel Robotic Sound Localization and Separation Using Non-Causal Filtering and Bayesian Fusion, IEEE 26th International Workshop on Machine Learning for Signal Processing (MLSP2016), Salerno, Italy.
- Keyrouz F. (2015) Binaural Range Estimation Using Head Related Transfer Functions. IEEE International Conference on Multisensor Fusion and Information Integration (MFI2015). San Diego, USA. (Best Paper Award Nomination)
- Keyrouz, F. (2014) Humanoid Hearing: Adaptive Approach. 11th IEEE/IASTED International Conference on Biomedical Engineering (BioMed2014), Zurich, Switzerland.
- Keyrouz F., Hamad M., & Georges S. (2013) A Novel Unified Maximum Power Point Tracker for Controlling a Hybrid Wind-Solar and Fuel-Cell System. IEEE 8th International Conference & Exhibition on Ecological Vehicles and Renewable Energies (EVER), Monte Carlo, Monaco.
- Keyrouz F., Hamad M., & Georges S. (2012) Bayesian Fusion For Maximum Power Output in Hybrid Wind–Solar Systems. IEEE International Symposium on Power Electronics for Distributed Generation Systems (PEDG), Aalbog, Denmark.
- Keyrouz F. (2012) Wind-Solar Energy Fusion Based on Swarm Intelligence. International Science Meeting: New Discoveries in Science, Zouk Mosbeh, Lebanon.
- Keyrouz F. & Georges S. (2011) Efficient Multidimensional Maximum Power Point Tracking Using Bayesian Fusion. IEEE International Conference on Electric Power and Energy Conversion Systems (EPECS'11), Sharjah, UAE.
- Keyrouz F. (2011) Humanoid hearing: A novel three-dimensional approach. IEEE International Symposium on Robotic and Sensors Environments (ROSE, Montreal, Canada.
- Keyrouz F. et al. (2008) Multi-Modal Multi-User Telepresence and Teleaction System. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS2008), Nice, France.
- Keyrouz F., Kirchmeier U. & Diepold K. (2008) Three Dimensional Object Tracking Based on Audiovisual Fusion Using Particle Swarm Optimization. 10th International Conference on Information Fusion, Cologne, Germany.
- Keyrouz F. & Diepold K. (2007) Robotic Binaural and Monaural Information Fusion Using Bayesian Networks. IEEE International Symposium on Intelligent Signal Processing (WISP2007), Madrid, Spain. (Excellent Top 10 Paper)
- Keyrouz F., Usman M. & Diepold K. (2008) Real time 3D humanoid sound source localization in actual environments. IEEE 21st Canadian Conference on Electrical and Computer Engineering (CCECE08), Ontario, Canada.
- Keyrouz F., Usman M. & Diepold K. (2007) Real time humanoid sound source localization and tracking in a highly reverberant environment. 4th IEEE Int. Coll. on Signal Processing and its Applications (CSPA), Kuala Lumpur, Malaysia.
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- Keyrouz F., Maier W. & Diepold K. (2007) Robotic Localization and Separation of Concurrent Sound Sources Using Self-Splitting Competitive Learning. IEEE Symposium on Computational Intelligence in Image and Signal Processing (CIISP), Hawaii, USA. (Best Presentation Award)
- Keyrouz F., Lazaro blasco F. & Diepold K. (2007) Hierarchical Fuzzy Neural Networks for Robotic 3d Sound Source Sensing. IEEE international Symposium on Neural Networks (ISNN). Nanjing, China.
- Keyrouz F. & Abou Saleh A. (2007) Intelligent Sound Localization Based on Head-Related Transfer Functions Extraction. IEEE 3rd International Conference on Intelligent Computer Communication and Processing (ICCP). Romania.
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(AES) 28th International Conference, Pitea, Sweden.
- Keyrouz F. & Diepold K. (2006) An Enhanced Binaural 3-D Sound Localization Algorithm. IEEE Int. Symp. on Signal Processing and Information Technology, Vancouver, Canada.
- Keyrouz F., Naous Y. & Diepold K. (2006) A New Method for Binaural 3-D Localization based on HRTFs. Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Processing (ICASSP), Toulouse, France.
- Keyrouz F., Xu W. & Gasiba T. (2006) Applying LDPC codes to the GPRS. 12th European Wireless Conference, Enabling Technologies for Wireless Multimedia Communications, Athens, Greece.

Chapters in Books

- Keyrouz F., Diepold K. and Keyrouz S. (2007) "Humanoid Binaural Sound Tracking Using Kalman Filtering and HRTFS". Book of Robot Motion and Control: Lecture Notes in Control and Information Sciences (LNCIS), Vol. 360, pp. 329–340, DOI: 10.1007/978-1-84628-974-3_30, Springer Press, London, United Kingdom.

Exhibitions, Competitions and Creative Work

Patents

- Heyer K., Keyrouz F., et al. (2014) Magnetic Valve Device. US Patent Office (USPTO), Patent No. 20140048732. http://assignment.uspto.gov/#/abstract?fq=applNum%3A13518001
- Heyer K., Keyrouz F., et al. (2011) Magnetic Valve Device. US World Intellectual Property Organization (WIPO), Patent No. WO/2011/076484. http://www.wipo.int/patentscope/search/en/WO2011076484