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信息检索

姚 力

基本信息

- 职称：教授
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教育背景

- 1983年获北京师范大学理学学士学位；
- 1998年获中国科学院自动化所工学博士学位。

社会兼职

现为北京师范大学信息科学与技术学院院长，北京师范大学“认知神经科学与学习”国家重点实验室主要成员。兼任中国电子教育学会理事、中国生物医学工程学会医学神经工程分会委员。

研究领域

智能信息处理

研究概况

本人主要从事智能信息处理方面的研究及应用工作，在基础研究与应用研究领域开展生命信息（主要指神经信息和生物信息）系统的数据分析、数据挖掘和计算模型等方面的研究，特别是针对EEG、FMRI、DTI等多种脑成像技术方法，运用信息科学的基本理论、方法和技术手段，与认知神经科学相结合，开展人脑高级功能信息处理的方法论及其应用的研究。多年来，本人带领信息处理实验室，开发了具有自主知识产权的脑信息处理软件平台，并获得数项发明专利、软件著作权。本人主持多项国家自然科学基金项目（包括重点项目、重大研究计划、海外青年学者合作研究基金项目、面上项目）、主持了1项863项目、主持了北京市自然科学基金重点项目等多项重要项目。近5年发表SCI论文20余篇， EI论文40余篇。

研究课题

- 神经影像信息处理及应用-老年痴呆的鉴别、早期预测与预防，国家自然科学基金重大国际合作研究项目，2013-2017（主持）
- 基于神经影像反演的三维图像重构，国家自然科学基金重点项目，2014-2016（主持）

- 基于认知的实时功能磁共振成像的理论与关键技术，国家自然科学基金重点项目，2010-2013
- 结合功能磁共振成像技术的脑机接口研究与实现，国家自然科学基金重大研究计划，2009-2011
- 脑-机接口技术中脑电（EEG）信号处理与系统实现，国家高技术研究发展计划（863计划），2007-2009
- 基于MRI的人脑神经通路计算模型，国家自然科学基金海外青年学者合作研究基金，2007-2009
- 识别脑区连接网络的研究及在老年痴呆病中的应用，北京市自然科学基金重点项目，2006-2008
- 识别大脑视听神经系统信息传导和处理机制的新方法，国家自然科学基金，2005-2007
- 基于体元的形态测量学（VBM）在中国儿童和青少年脑发育研究中的应用，教育部科学技术研究重点项目，2005-2006
- 儿童脑发育与可塑性研究，国家攀登计划子课题，2004-2006
- 中国儿童标准脑模型的构建，国家自然科学基金项目，2003-2005
- 脑动力学的理论和实践研究，国家自然科学基金项目，2001-2003
- 脑功能成像信息处理和高级认知功能的研究，高等学校骨干教师资助计划，2001-2003
- 电子与电器信息类专业人才培养改革成果的整合与深化，教育部世行贷款重点项目，2001-2003

奖励与荣誉

- “电子与电气信息类专业课程体系和课程建设成果的整合”2005年获“北京市教育教学成果二等奖”。

学术成果

- 基于实时功能磁共振信号的神经反馈系统，（中国发明专利申请号: 201010249131.5），发明人: 姚力，赵小杰，李熠。
- BIli脑磁共振成像数据处理软件，软件著作权登记号:2007SR14196。
- Xu LL; Wu X; Chen KW; Yao L*. Supervised within-class-similar discriminative dictionary learning for face recognition. JOURNAL OF VISUAL COMMUNICATION AND IMAGE REPRESENTATION 2016, 38(561-572).（SCI）（*为通讯作者，下同）
- Guo XJ, Wang Y, Guo TM, Chen KW, Zhang JC, Li K, Jin Z, Yao L*. Structural covariance networks across healthy young adults and their consistency. Journal of Magnetic Resonance Imaging 2015, 42(2): 261-268.（SCI）
- Xu L; Zhang, H; Hui M; Long Z; Jin Z; Liu Y; Yao L. Motor execution and motor imagery: A comparison of functional connectivity patterns based on graph theory. Neuroscience 2014, 261(184-194).（SCI）
- Zhang H; Long, ZY; Ge RY; Xu LL; Jin Z; Yao L; Liu YJ. Motor Imagery Learning Modulates Functional Connectivity of Multiple Brain Systems in Resting State. PloS ONE 2014, 9(1).（SCI）
- Xia Wu, Lele Xu, Li Yao*. Big data analysis of the human brain’s functional interactions based on fMRI. Chinese Science Bulletin. 2014, 59(35):5059–5065.（SCI）
- Guo XJ, Chen KW, Zhang YM, Wang Y, Yao L*. Regional covariance patterns of gray matter alterations in Alzheimer’s disease and its replicability evaluation. Journal of Magnetic Resonance Imaging 2014,39(1):143-149. (SCI)
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- Xia Wu,Rui Li,Adam S. Fleisher,Eric M. Reiman,Xiaoting Guan,Yumei Zhang,Kewei Chen,Li Yao. Altered Default Mode Network Connectivity inAlzheimer’ s Disease—A Resting Functional MRIand Bayesian Network Study. Human Brain Malilиing2011, 32(11):1868–1881.(SCI)
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学院专题

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