GEXIN HUANG

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EDUCATION

South China University of Technology (SCUT) Guangzhou, China
M.S. in School of Automation Science and Engineering Jan. 2018 - Dec. 2021 (expected)
Pattern Recognition and Intelligent System **GPA – 3.30/4.00 (16/120)**

Civil Aviation University of China (CAUC) Tianjin, China
B.S. in College of Electric Information and Automation Sep. 2012 - Jun. 2016
Automation **GPA – 3.60/4.00 (10/130)**

WORK EXPERIENCE

Xiamen Airlines Co. Xiamen, China
Engineer for Electronic and Software Systems of Aircraft Aug. 2016 - Oct. 2017

PUBLICATION

- **Gexin Huang**, Zhuliang Yu, Wei Wu, Ke Liu, Zhenghui Gu, Feifei Qi, Jiawen Liang, and Yuanqing Li "Electromagnetic Source Imaging via a Data-Synthesis-Based Denoising Autoencoder ", arXiv:2010.12876, 2020

RESEARCH EXPERIENCES

Center for Brain Computer Interfaces and Brain Information Processing SCUT
Advisors: Prof. Zhuliang Yu and Prof. Wei Wu Jan. 2018 - Oct. 2021

- **Multi-task learning for E/MEG Inverse Problem** Aug. 2020 - Oct. 2021
  - Separated E/MEG inverse problem as multi-label classification and multi-regression tasks.
  - Utilized deep walk for label embedding to solve extreme multi-label problem.
  - Devised attention-based gate control networks for representation learning of spatiotemporal structure of data.
- **Solving E/MEG Inverse Problem via Data Synthesis Strategy** Jul. 2019 - Aug. 2020
  - Work was under review at IEEE Transactions on Neural Network and Learning Systems.
  - Proposed a data-driven denoising autoencoder (DAE) to solve ill-posed inverse problem.
  - Designed a data synthesis strategy and dedicated layers to incorporate the prior knowledge.
- **Multi-modal Learning in Neural Signals with Bayesian Deep Learning** Jan. 2018 - Jun. 2019
  - Proposed a generative multi-view model to respectively predict the EEG-fMRI simultaneous datasets.
  - Built a hybrid model that integrates neural networks into probabilistic models for Bayesian inference.
  - Devised an iterative optimization scheme via mean-field variational inference and SGD for the hybrid model.

Institute of Intelligence and Robotics CAUC
Advisors: Prof. Qinji Gao and Prof. Guocheng Niu Sep. 2013 - Jun. 2016

- **Recognition and Control System for Vision-based Biped Robot** Oct. 2015 - Jun. 2016
  - Designed line detection and tracking algorithms based on linear discriminant analysis and hidden Markov model.
  - Build the dynamically stable walking algorithm based on zero moment point (ZMP).
- **National University Students Intelligent Car Race** Aug. 2014 - Oct. 2015
  - Devised the hardware system of upright car and its self-balancing control via the PID algorithm.
  - Designed the obstacle avoidance and adaptive-threshold-based path tracking algorithms.
- **Detection and Recognition of Ground Targets for Quadrotor UAV** Sep. 2013 - Oct. 2014
  - Published the work on Chinese journal of civil aviation science and education.
  - Built a control and HOG-SVM-based decision system for UAV to detection and trace ground targets.

RELEVANT COURSEWORK

Advanced mathematics	Probability & Statistics	Complex Variables	Linear Algebra
Pattern Recognition	Machine Learning	Digital Signal Processing	Optimization

HONORS & AWARDS

- **Excellence Prize of Intelligent Car Race in Huabei Division** 2015
- **Series of College Awards**
  - First Prize Scholarships 2012-2013, 2020
  - Second Prize Scholarships 2014-2015, 2019
  - Excellent Graduate Student Cadres
  - Excellent Student Cadres and Outstanding League Cadres
  - Outstanding Cadres of Student Association