

JIAMING LAI

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EDUCATION

University of California San Diego , College of Electrical and Computer Engineering	2019.09–2021.06
<ul style="list-style-type: none">• M.S. in Intelligent Systems, Robotics, and Control• GPA: 3.86/4.00• Fellowship: Summer Research Internship Program Fellowship 2020	
Zhejiang University , College of Control Science and Engineering	2015.09–2019.07
<ul style="list-style-type: none">• B.Eng. in Automation• GPA: 3.80/4.00	

SKILLS

Programming/Software: C++/C, Java, Python (NumPy, Pandas, scikit-learn), PyTorch, TensorFlow, MATLAB, ROS, Git.
Strengths: Knowledge of robotics, machine learning algorithm and deep learning techniques. Experience in neural spike trains and ECoG neural data analysis, software development for robotics system and embedding system.

MANUSCRIPT

[1] Tejaswy Pailla, **Jiaming Lai**, Venkatesh Elango, Aashish N. Patel, Vikash Gilja, "Inter-subject transfer learning for decoding Electrocorticographic signals" (In preparation)

RESEARCH EXPERIENCE

Research Assistant Advisor: Prof. Vikash Gilja (Associate Professor, UCSD)	2019.11–present
Brain-machine Interfaces: Transfer Learning for Decoding Electrocorticographic Signals in Finger Flexion Experiments	
<ul style="list-style-type: none">• Implemented frequency power feature engineering on electrocorticographic (ECoG) neural data from sensory-motor cortex.• Developed multi-task BMIs network for mapping spatio-temporal patterns in ECoG signals to finger trajectory regression and movement intent identification: a fully convolutional aligner for exacting latent space and a LSTM decoder for learning temporary feature propagation.• Transferred the BMIs network across multiple users, improved the performance and robustness using domain adaptation.	
Research Assistant Advisor: Prof. Guofeng Zhang (Professor, Zhejiang University)	2019.03–2019.06
Indoor Environment Mapping Based on Turblebot2 and Kinect2	
<ul style="list-style-type: none">• Built autonomous mobile robot system based on Turblebot2, Nvidia Jetson TK1 and Microsoft Kinect2.• Developed embedding system software on Jetson TK1 to navigate Turblebot2, analyze image and depth information from Kinect2 and build OctoMap 3D occupancy grid map by using ROS and C++. Achieved grid map real-time building.• Optimized system software to improve scalability and extensibility for future growth.	
Research Assistant Advisor: Prof. Rong Xiong (Professor, Zhejiang University)	2017.09–2018.05
ZJUDancer: Robot Team for KidSize Soccer Competition of RoboCup Humanoid League	
<ul style="list-style-type: none">• Developed motion planning software for walking and kicking action for soccer robot using ROS and C++.• Experimented software reliability with simulation using Gazebo and succeeded to deploy in 5 robot system.• Achievement: our team achieved KidSize Soccer Competition 2nd Place in RoboCup 2017 and 2019.	

PROJECTS

UCSD ECE276A: Sensing & Estimation in Robotics	2020.01–2020.04
Lidar+IMU Simultaneous Localization and Mapping (SLAM) with Particle Filter	
<ul style="list-style-type: none">• Developed particle filter SLAM method to localize robot position and generate occupied map, by using IMU odometry data and 2D Lidar scan. Experimented in 5 datasets. Optimized software and increased computational efficiency by at least 70%.	
Visual Simultaneous Localization and Mapping (SLAM) with EKF Filter	
<ul style="list-style-type: none">• Developed visual-inertial SLAM method to generate IMU trajectory and landmark map using Extended Kalman filter.• Experimented in 3 large scale datasets, optimized and achieved 3x faster computational performance.	

TEACHING EXPERIENCE

Teaching Assistant for ECE225A: Prob & Stats for Data Science by Prof. Alon Orlitsky	2020.09–2020.12
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