**青年学术论坛邀请报告**

**报告人1**： **JAE KYU CHOI（崔仔珪）** 博士 (同济大学)

邀请人： 黎芳

**时间**：4月10日（周 三） 13:00--13:50

**地点**：闵行数学楼402报告厅

**题目**: HIRE: Harmonic Incompatibility REmoval Model for Whole Brain Susceptibility Imaging

**摘要**：Quantitative susceptibility mapping (QSM) uses the phase data in magnetic resonance signal to visualize a three dimensional susceptibility distribution by solving the magnetic field to susceptibility inverse problem. Due to the presence of zeros of the integration kernel in the frequency domain, QSM is an ill-posed inverse problem. Although numerous regularization based models have been proposed to overcome this problem, the incompatibility in the field data, which leads to deterioration of the recovery, has not received enough attention. In this talk, we show that the data acquisition process of QSM inherently generates a harmonic incompatibility in the measured local field. Based on such discovery, we propose two harmonic incompatibility removal (HIRE) susceptibility reconstruction models. The first generation HIRE (1GHIRE) adopts an additional sparsity based regularization term on the harmonic incompatibility. The second generation (2GHIRE) model adopts the idea of structured low rank approximation to better reflect the harmonic property of the incompatibility. Experimental results show that the proposed HIRE models achieve better performance than the existing single system regularization based approaches.

**个人简介**：JAE KYU CHOI earned his Ph.D. in applied mathematics from Yonsei University in 2015, and then worked as a postdoc at Shanghai Jiao Tong University for three years. Since November 2018, he joined the School of Mathematical Sciences at Tongji University as an assistant professor. His research interests include imaging sciences, medical imaging, inverse problems, frame based approaches, computational harmonic analysis, and microlocal analysis.

**报告人2**： **马丽艳** 博士 (上海大学)

邀请人： 黎芳

**时间**：4月10日（周 三） 13:50--14:40

**地点**：闵行数学楼402报告厅

**题目**: Convolutional Neural Networks for Object Recognition and Classification

**摘要：**近年来，深度卷积神经网络已经被大量用于解决各种视觉问题，并且在大多数基础任务上（例如目标识别、检测和分割）均取得90%以上甚至超过人类的精度，但大部分停留在实验室研究阶段。在报告中，我们将针对实际应用场景需求，介绍我们的研究工作，包括目标识别和分类。

**个人简介：**马丽艳，2013年获得北京交通大学计算机科学与技术专业博士学位，2013年7月至2018年9月在中科院微电子所任助理研究员、副研究员。2018年9月起任上海大学计算机工程与科学学院副研究员，研究方向计算机视觉、深度学习和工业视觉检测。主持参与国家自然科学基金青年基金、中科院国防科技创新基金，国家重点研发计划等；在应用领域，主要从事面向智能机器人系统的图像识别、分类算法研究。