

智能计算团队

1. 团队简介

智能计算团队主要研究进化算法，群智能算法，机器学习等。方向包括进化多目标优化与应用，高代价优化问题，多目标多任务最优化，双层优化算法设计与应用，卷积神经网络，迁移学习，增量学习，自适应信号处理等。目前，团队主要成员有9人，其中教授3人，副教授4人，讲师2人，获得博士学位7人。其中3人入选广东工业大学“青年百人”人才计划，主持国家基金7项、广东省自然科学基金、省科技计划及广州市科技计划项目20项。在国内外期刊《IEEE Transactions on Evolutionary Computation》、《IEEE Transactions on Cybernetics》、MIT的《Evolutionary Computation》、《IEEE Computational Intelligence Magazine》、《Information Science》、《Science China: Series A》、《Applied Mathematics and Computation》、《Mathematical Method in the Applied Science》、《Applied Soft Computing》、《Swarm and Evolutionary Computation》、《电子学报（英文版）》、《计算机研究与发展》等发表了100多篇论文，其中包括高被引论文。授权发明专利和软件著作权近10件。

2. 团队负责人简介

刘海林，博士，广东工业大学教授，大数据研究院副院长，博士生导师，广东省现场统计学会副理事长，IEEE的高级会员，国际进化计算顶级刊物IEEE Transaction on Evolutionary Computation副主编（Associate Editor）。主要从事计算智能、无线通信网络规划优化、机器学习等方面的研究工作。近5年来项目申请人在进化多目标算法与优化领域发表了30多篇期刊学术论文。其中申请人以第一作者在智能计算国际顶级刊物IEEE Trans. on Evolutionary Computation发表的论文Decomposition of a multiobjective optimization problem into a number of simple multiobjective subproblems中提出的算法MOEA/D-M2M进入ESI前1%，被Google scholar引用365次，两次获得国际会议最佳论文奖。申请人主持了2项国家自然科学基金，1项广东省国际合作交流项目，4项广东省自然科学基金，做为团队核心组成员参与1项广东省团队项目及广州市产学研重大专项等。先后指导2名研究生获得广东省优秀硕士论文称号，2名获得广东省优秀研究生称号。

3. 团队主要成员

| 姓名 | 学位 | 专业技术职务 | 研究方向 |
|-----|----|--------|------------------|
| 刘海林 | 博士 | 教授 | 智能计算、移动网络优化、机器学习 |
| 温洁嫦 | 硕士 | 教授 | 最优化方法; 智能计算 |
| 邓秀勤 | 硕士 | 教授 | 数据挖掘，智能计算，人工智能 |
| 陈学松 | 博士 | 副教授 | 控制理论与控制工程、计算数学 |
| 谭立辉 | 博士 | 副教授 | 机器学习及自适应信号处理 |
| 莫浩艺 | 博士 | 副教授 | 随机系统 |
| 莫艳 | 博士 | 副教授 | 计算与应用调和分析、学习理论 |
| 辜方清 | 博士 | 讲师 | 智能计算，数据挖掘 |
| 陈磊 | 博士 | 讲师 | 智能计算，机器学习 |

4. 团队承担科研项目

| 项目名称 | 项目类别 | 执行期限 | 主持人 |
|--|----------------|-----------|-----|
| 融合自适应分解与单纯形支配的进化超多目标优化算法及其应用 | 国家自然科学基金 | 2017-2017 | 刘海林 |
| 3G 基站位置与参数配置的建模和优化算法研究 | 国家自然科学基金 | 2010-2012 | 刘海林 |
| 面向数据驱动获取迁移特征的进化超多目标优化算法 | 广东省自然科学基金 | 2019-2022 | 刘海林 |
| 面向 5G 无线通信系统能源-频谱效率优化算法研究 | 广州市科技计划项目 | 2018-2020 | 刘海林 |
| TD-LTE 系统多小区多用户自适应资源调度建模及优化算法研究 | 广东省自然科学基金 | 2014-2017 | 刘海林 |
| 蜂窝无线网络位置区规划的智能优化算法研究 | 广东省自然科学基金 | 2010-2012 | 刘海林 |
| 新一代无线通信 TD-LTE 系统自适应资源分配软件产品研发 | 广州市产学研协同创新重大专项 | 2015-2017 | 刘海林 |
| 4G 移动通信网络规划的优化设计技术 | 广东省教育厅特色创新项目 | 2014-2016 | 温洁嫦 |
| WCDMA 移动通信网络规划的智能优化设计技术 | 广州市科技计划项目 | 2011-2013 | 温洁嫦 |
| 开关系统的稳定性与广义谱半径的逼近计算 | 广东省自然科学基金项目 | 2011-2013 | 温洁嫦 |
| 基于网络短文本的服务评价挖掘系统及其在移动互联网中的应用 | 广东省科技计划项目 | 2011-2013 | 邓秀勤 |
| 基于宜搜的移动互联网商业模式研究及其手机“展会”平台的开发与运营 | 广东省教育部产学研结合项目 | 2012-2015 | 邓秀勤 |
| 调和和分析在 Bedrosian 等式和非线性 Fourier 分解中的应用 | 国家自然科学基金青年基金 | 2012-2014 | 谭立辉 |
| 复方法在自适应分解中的应用 | 广东省自然科学基金博士启动 | 2011-2013 | 谭立辉 |
| 智能材料微驱动器的迟滞补偿控制原理和方法研究 | 广州市科技计划项目 | 2020-2023 | 陈学松 |
| 压电陶瓷驱动器的动态模型辨识与自适应控制方法研究 | 广东省自然科学基金 | 2018-2021 | 陈学松 |
| 压电陶瓷执行器的迟滞非线性建模与控制方法研究 | 广东省自然科学基金 | 2015-2018 | 陈学松 |
| 压电陶瓷执行器的动态模型辨识与控制方法研究 | 中国博士后科学基金项目 | 2013-2014 | 陈学松 |
| 面向工业与电器检测领域的综合业务平台 | 广东省现代信息服务业发展专项 | 2011-2014 | 陈学松 |
| 多智能机器人系统的研究及其科普教育活动 | 广州市科学计划项 | 2014-2016 | 陈学松 |

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|---|-----------------------|-----------|-----|
| 基于 Takenaka-Malmquist 基的统计学习理论逼近方法及其在系统辨识中的应用 | 国家自然科学基金青年基金项目 | 2018-2021 | 莫艳 |
| 基于 <i>Szegö</i> 核的稀疏贝叶斯逼近方法及其在系统辨识中的应用 | 国家自然科学基金专项基金项目-数学天元基金 | 2017-2017 | 莫艳 |
| 中立型 Poisson 跳变随机泛函微分系统的稳定性、数值计算与仿真 | 国家自然科学基金青年基金项目 | 2019-2021 | 莫浩艺 |
| 具有 Poisson 跳变的中立型随机泛函系统的稳定性及其数值方法研究 | 广东省自然科学基金 | 2018-2021 | 莫浩艺 |
| 面向高维微阵列基因数据分析的超多目标进化聚类研究 | 国家自然科学基金青年基金项目 | 2018-2021 | 辜方清 |
| 基于群体驱动的超多目标优化关键技术研究 | 广东省自然科学基金 | 2017-2020 | 辜方清 |

5. 代表性研究成果

5.1 科研论文

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5.2 授权专利

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[11]刘海林、王强正交频分复用系统的动态资源分配方法中国，发明专利
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明专利 201310329299.0