SOUTH CHINA UNIVERSITY OF TECHNOLOGY

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SCUT Newsletter 华工新闻快讯

1. SCUT co-founds *Aggregate*

华南理工大学联合创办期刊Aggregate盛大发布

On January 27-29, the launch conference of *Aggregate* and aggregate science-themed forum were held in Guangzhou. The journal was co-founded by South China University of Technology (SCUT), AIE Institute, and John Wiley & Sons Group. Around 92,000 experts, scholars, and students were attracted to join in this event.

1月27-29日，由华南理工大学、广东省大湾区华南理工大学聚集诱导发光高等研究院（简称AIE高等研究

院）和Wiley出版集团合办期刊*Aggregate*（《聚集体》）发布会暨聚集体科学研讨会在广州召开。本次会议共吸引了9.2万人次的专家、学者和学生参与。

The launch conference was held online to offline. 28 academicians, well-known experts, and scholars in the field of aggregate science shared their major research achievements and engaged in active discussions. The topics involved multifunctional materials including AIE systems, supramolecular materials, magnetic materials, nanomaterials, organic semiconductors, polymer materials, and nucleic acids as well as the applications of these materials in the fields of biomedicine, optoelectronic devices, and environmental protection.

本次发布会采用线下及线上结合的方式，围绕包括聚集诱导发光体系、超分子材料、磁性材料、纳米材料、有机半导体、聚合物材料、核酸等多功能材料在生物医药、光电器件、环境保护等领域的应用，28位聚集体领域的院士、知名专家学者分享了自己的重要成果并进行了热烈讨论。

Note: About *Aggregate* :

附：*Aggregate*（《聚集体》）期刊简介：

Aggregate was co-founded by SCUT, AIE Institute, and John Wiley & Sons Group. It aims to become an international multidisciplinary academic journal that covers the cutting-edge achievements of aggregate science and technology in terms of both fundamental science and application research. The journal will publish research articles, reviews, editorials, research highlights, profiles, comments, and essays, etc.

Aggregate（《聚集体》）由华南理工大学、AIE高等研究院、Wiley出版集团三方合作创办，旨在成为报道聚集体科学与应用研究的前沿科技成果的跨学科国际学术期刊。该期刊出版文章类型包括研究论文、综述、社论、研究亮点、人物介绍、评述等。

2. SCUT adds 2 undergraduate majors and 16 national first-class undergraduate programs

华南理工大学新增2个本科专业 16个国家级一流本科专业建设点

On February 22, the Ministry of Education (MoE) released the 2020 list of national and provincial first-class undergraduate programs. SCUT saw 16 national and 13 provincial first-class undergraduate programs newly included in the list. This increased the total number of national first-class undergraduate programs of SCUT to 40, accounting for 48% of the University's undergraduate programs. In addition, the number of its provincial first-class undergraduate programs has reached 19.

2月22日，教育部公布2020年度国家级和省级一流本科专业建设点名单，华南理工大学新增16个国家级一流本科专业建设点和13个省级一流本科专业建设点。据统计，华南理工国家级一流本科专业建设点总数达到40个，占该校本科专业数量的48%；省级一流本科专业建设点达到19个。

Majors of National First-class Undergraduate Programs in 2020

2020年度国家级一流本科专业建设点入选专业

Intellectual Property Rights 知识产权	sport Training 运动训练	Business English 商务英语	Communication 传播学
Biotechnology 生物技术	Engineering Mechanics 工程力学	Mechatronic Engineering 机械电子工程	Industrial Design 工业设计
Process Equipment & Control Engineering 过程装备与控制工程	Energy and Power Engineering 能源与动力工程	Transportation Engineering 交通工程	Environmental Engineering 环境工程
Biomedical Engineering 生物医学工程	Food Quality and Safety 食品质量与安全	Industrial Engineering 工业工程	Environmental Design 环境设计

Majors of Provincial First-class Undergraduate Programs in 2020

2020年度省级一流本科专业建设点入选专业

Advertising 广告学	Information and Computing Science 信息与技术科学	Information Security 信息安全	Intelligence Science and Technology 智能科学与技术
Energy Chemical Engineering 能源化学工程	Transportation 交通运输	Safety Engineering 安全工程	Project Management 工程管理
Marketing 市场营销	Human Resources Management 人力资源管理	Logistics Engineering 物流工程	MICE Economy and Management 会展经济与管理
Product Design 产品设计			

Two undergraduate majors, Artificial Intelligence and Financial Technology, have been approved for establishment with enrollment at Guangzhou International Campus in 2021.

华南理工大学人工智能、金融科技等2个本科专业获批设立并将于2021年在广州国际校区首次招生。

SCUT adds two undergraduate majors "Artificial Intelligence" and "Financial Technology"

华南理工大学新增"人工智能""金融科技"2个本科专业

Major 专业名称	Code 专业代码	Degree 学位授予门类	Years 修业年限
Artificial Intelligence 人工智能	080717T	Engineering 工学	Four Years 4年
Financial Technology 金融科技	020310T	Economics 经济学	Four Years 4年

In response to the existing challenges of artificial intelligence and the country's demand for artificial intelligence talents, SCUT has been preparing to establish an Artificial Intelligence major. Through innovative learning models, such as integration with international standards, integration of production, teaching and research, interdisciplinary integration, and school-enterprise cooperation, the two new majors will help boost AI talent cultivation, provide the much-needed AI talents in the Greater Bay Area, and facilitate the development of the Greater Bay Area into one of the world's leading S&T innovation and economic development centers.

针对目前人工智能的新挑战以及国家对人工智能人才的需求，华南理工大学设立人工智能专业，将通过与国际接轨、产教研结合、多学科交叉融合、校企合作等创新办学模式，提升人工智能领域的人才培养水平，填补大湾区人工智能人才缺口，助推粤港澳大湾区成为世界科技创新中心、世界经济发展中心。

In recent years, SCUT has taken the opportunities provided by the Double First-Class University Plan and the development of Guangzhou International Campus to fully implement the *Action Plan (2018-2030) of SCUT on First-Class Undergraduate Education*, so as to connect the economic and social development of the country and Guangdong Province with the development of strategic

emerging industries. By establishing and developing undergraduate majors that meet economic and social development demands, have significant advantages and distinctive characteristics, and align with the University's discipline development plan, SCUT aims to accelerate the cultivation of talents for innovation, creation and entrepreneurship to meet the needs of the new economy and new industries.

近年来，华南理工大学以"双一流"建设和广州国际校区建设契机，全面实施《华南理工大学一流本科行动计划（2018—2030）》，对接国家和广东省经济社会发展和战略性新兴产业发展需求，建设和布局适应经济社会发展需要、优势突出、特色鲜明、符合学校学科发展规划要求的本科专业，加快培养适应新经济、新产业需求的"三创型"人才。

3. Congratulations! SCUT's Poverty Alleviation Workforce to Kongmei Village wins the honorary title of "National Advanced Team for Poverty Alleviation"

喜报！华南理工大学驻孔美村扶贫工作队获评全国脱贫攻坚先进集体

On February 25, a grand gathering was held at the Great Hall of the People in Beijing to mark China's accomplishments in poverty alleviation and honor the model poverty fighters. President Xi Jinping, General Secretary of the Communist Party of China Central Committee and Chairman of the Central Military Commission, presented awards to role models in China's poverty alleviation efforts and delivered a keynote speech. At the meeting, individuals and teams at the forefront of poverty alleviation were also commended. SCUT's Poverty Alleviation Workforce to Kongmei Village, Longjiang Town, Huilai County, was awarded the title of "National Advanced Team for Poverty Alleviation".

全国脱贫攻坚总结表彰大会于2月25日上午在北京人民大会堂举行。中共中央总书记、国家主席、中央军委主席习近平向全国脱贫攻坚楷模荣誉称号获得者颁奖并发表重要讲话。大会还对全国脱贫攻坚先进个人、先进集体进行表彰。其中，华南理工大学驻惠来县隆江镇孔美村扶贫工作队（以下简称"驻村工作队"）获评全国脱贫攻坚先进集体。

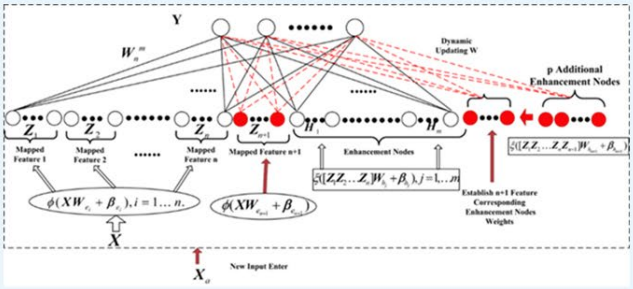
The Workforce has been engaged in targeted poverty alleviation measures in the new era since 2016. Through the "Five Ones of Party Building Education" project, it developed plans for Kongmei Village to become a model village for the new countryside and to improve its landscape, as well as helping to

improve the village appearance, culture and tourism. Since the launch of the poverty alleviation initiative, the Workforce has made great efforts in exploring the cultural connotation of the Kongmei Village. They created the brand Kongzimei for products like rice, mung bean pastry as well as cultural and creative tourism. They also organized poverty alleviation product exhibitions for two consecutive years to promote consumption-driven poverty alleviation. By doing so, the income of both poor households and the Village increased and a SCUT model for poverty alleviation formed.

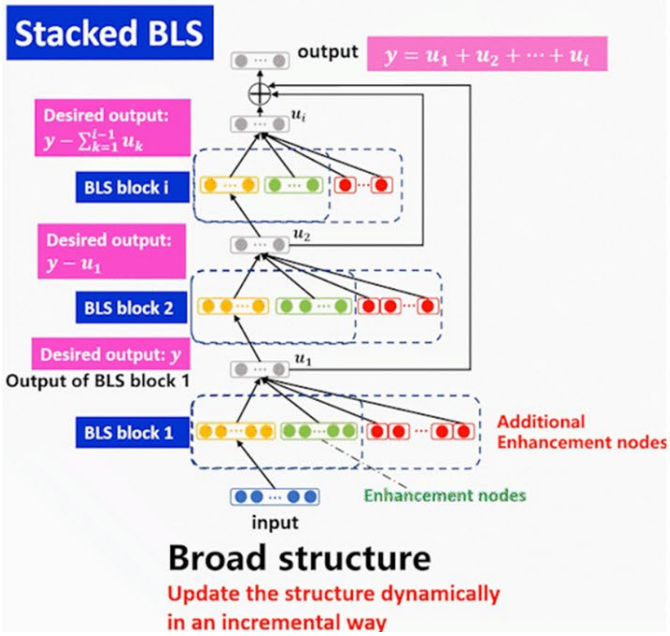
驻村工作队自2016年以来组织开展新时期精准扶贫工作，为孔美村制定新农村示范村建设规划、景观提升规划，实施"党建教育五个一"工程，以建设"红色孔美"推动"美丽孔美""文化孔美""旅游孔美"建设。自帮扶以来，驻村工作队挖掘孔美村文化内涵，打造"孔子美"品牌，包括"孔子美"香米、绿豆饼、文创旅游等产品，连续两年举办扶贫产品展销会，推动消费扶贫，实现贫困户和村集体双增收，真正打造形成脱贫攻坚华工模式。

PERFORMANCE COMPARISON WITH SELECTED STATE-OF-THE-ART DEEP METHODS

Algorithms	CIFAR-10	CIFAR-100	SVHN
Capsule Net [56]	89.3%	-	95.7%
GDCNN [57]	89.23%	66.7%	-
Meta Net [58]	88%	-	-
CGap [59]	93.59%	73%	96.25%
SReluDCNN [60]	93.02%	70.9%	-
Stacked CCFBLS	**94.78%**	**88.56%**	**97.12%**



Dynamic updated procedures of Broad Learning System



4. SCUT's Chen Junlong Team releases its latest results—constructing a stacked broad neural network into a depth model

构建叠层宽度神经网络成深度模型　华南理工陈俊龙团队发布最新成果

On January 6, the Stacked Broad Learning System (BLS) with a subversive combination of depth and breadth designed by Professor Chen Junlong of SCUT and his team to dynamically expand neurons and their number of layers was released. Through a single-layer structure and the pseudo-inverse method, the system can flexibly change the breadth and depth of the network structure through stacking and obtain an optimal solution of the model. Therefore, it can be dynamically adjusted for different tasks to improve the flexibility, adaptability and generalization ability of the model. Meanwhile, it can save a lot of computing resources and greatly shorten computing time. In practical applications, the system allows unlimited prospects for edge computing with intelligent learning functions at the edge.

1月6日，由华南理工大学陈俊龙教授及其团队设计的一种可以动态扩展神经元及其层数的颠覆性深度和宽度结合--叠层宽度学习网络（Stacked BLS），通过单层结构和求伪逆的方法，通过叠层的思想，可以灵活地改变网络结构的宽度和深度，获得模型最优解。因此，能够针对不同任务进行动态的调整，提高模型的

灵活性、适应性和泛化能力。同时节省了大量的计算资源，并大幅缩短计算时长。该系统在实际应用中，赋予边缘端智能学习功能的边缘计算无限的前景。

The achievement of Professor Chen Junlong's team is based on the Broad Learning System (BLS) they put forward in 2018. Their paper in 2018 was also awarded the Best Journal Paper of IEEE Transactions on Neural Networks and Learning Systems 2021.

陈俊龙教授团队的这一成果，是在其2018年提出了宽度学习系统（Broad Learning System，BLS；此2018年论文也获2021年IEEE Transactions on Neural Networks and Learning Systems年度最佳期刊论文）的基础上提出的。

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