






**Loughborough
University
London**

Institute for Digital Technologies

www.lborolondon.ac.uk/study

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The Institute for Digital Technologies combines specialist teaching, research and enterprise to give you expert knowledge of the latest advances in digital technologies. You will work with real clients to shape the future of audio, visual and digital media systems, whilst discovering the latest in advanced 5G networks, IoT and Smart Systems.

Career prospects

You will develop the knowledge and skills required to secure a wide variety of roles in the digital and technological industries. Our work with Thales, BBC, Telefonica, IRT, Rohde & Schwarz, Technicolor, Arcelik, Telecom Italia, Disney Research and Airbus Defence and Space enables you to connect with some of the greatest employers in the sector.

MSc Cyber Security and Big Data

This programme will provide students with a comprehensive understanding of the challenges relating to cyber security and big data, and how these issues can affect society. You will develop knowledge and expertise in network security, cryptography and big data analytics, providing you with employment skills essential to the cyber security and big data industry and other related sectors.

MSc Digital Creative Media

This programme focuses on the gaming technologies, media production, as well as creative media design and practices, which are all taught by the leading experts in the area. You will also benefit from first-hand experience in 3D creative media and studio environments, all of which will provide a unique opportunity to engage with advanced research motivated problems in the exciting topics related to digital creative media.

MRes Digital Technologies

Students who choose an MRes in Digital Technologies will receive guidance from academics leading research in the fields of internet and multimedia technology. Academics will share their expertise on Internet and Communication Networks and Multimedia Systems, enabling students to gain specialised knowledge of these fields.

MSc Internet Technologies with Business Management

This programme aims to develop outstanding, business-minded technologists who will lead the future of the internet. You will discover the latest advances in internet systems and hear from leading experts in the field. Each module will support you in the development of new thinking and skills, so that you can design the processes, architectures and business models of tomorrow.

MSc Mobile Communication Systems

This programme is aimed at providing knowledge and expertise in the latest mobile and wireless communications technologies driving the evolution of mobile Internet. You will gain advanced knowledge of broadband, mobile and wireless communication networks, as well as future internet and related areas.



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数字技术学院

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数字技术学院综合了专业教学、研究和创新精神，为您提供数字技术领域的最新进展和专业知识。您将与真实的客户合作，塑造音视频和数字媒体系统的未来，并探索先进的第5代通信网络、物联网以及智能系统的最新进展。

未来职业前景

您将会培养得到在数字技术业界里各种职位所需的专业知识和技能。我们与法国泰雷兹集团 (Thales)，英国广播公司 (BBC)，西班牙电信 (Telefonica)，德国广播研究院 (IRT)，德国罗德与施瓦茨公司 (Rohde & Schwarz)，法国特艺集团 (Technicolor)，土耳其阿奇利克公司 (Arcelik)，意大利电信 (Telecom Italia)，迪斯尼研究中心 (Disney Research)，以及空中客车公司国防和航空部门 (Airbus Defence and Space) 的合作使您能接触到本行业中一些最佳用人单位。

网络安全和大数据系统专业硕士

本专业旨在使学生全面了解与网络安全和大数据有关的挑战以及相关问题会如何影响我们的社会；培养学生在网络安全、保密和大数据分析方面的专业知识和能力；并为学生提供在网络安全、大数据及其它有关行业必须的就业技能。

数字创意媒体专业硕士

数字创意媒体专业由该领域的顶级专家施教，专注于游戏技术、媒体制作，以及创意媒体的设计和实践。学生还将受益于从3D创意媒体环境和创意工作室所获得的第一手经验。所有这些都将为学生提供一个独特的机会，使他们能参与到和数字创意媒体相关的高级研究课题中来。

数字技术专业研究型硕士

在数字技术专业的研究型硕士生将会得到在互联网和多媒体技术等研究领域内顶级学者的指导。学者们将分享他们在互联网、通信网络及多媒体系统等方面的专长，以使学生在获得这些领域的专业知识。

互联网技术与商业管理专业硕士

本专业旨在培养杰出的、具有商业头脑的、能领导未来互联网的技术人才。学生将会了解互联网系统的最新进展，并聆听在该领域领先的专家授业。每门课程均有助于学生开发新的思维和技能，以便其可以设计未来互联网商务的流程、架构和商业模式。

移动通信系统专业硕士

本专业旨在提供推动移动互联网不断演化和发展的移动及无线通信技术的最新专业知识和技能。学生将会获得宽带、移动及无线通信网络和未来互联网及相关领域的先进知识。




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Institute for Digital Technologies


MRes in Digital Technologies

MSc 1 Year full-time, up to 4 year's part-time

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Students who choose an MRes in Digital Technologies will receive guidance from academics leading research in the fields of Internet, telecommunications and multimedia technologies. The MRes programme will enable students with a passion for research to widen their skills, focus their interests and take the next step towards a PhD or future career.

Studying an MRes with Loughborough University London will give you a fascinating introduction into the life of a postgraduate researcher. The MRes programme has been carefully designed to empower graduates with rigorous research and analytical skills, in order to progress onto high level researcher positions within their chosen sector or field.

The MRes programme will explore the research processes, and uncover the designs, practices and methodologies used by experienced researchers from a range of disciplines. The MRes places more emphasis on the individual to uncover new knowledge and develop their own research expertise.

In addition to a major research project all students studying an MRes programme will complete taught units such as: The Collaborative Research Project, Research Design, Practice and Ethics, Quantitative Research Methods, Foundations in Qualitative Research.

Career prospects

Research skills are greatly in demand across the high value industries in the UK and worldwide. Alongside the taught elements of the programme you will be able to access a tailor-made professional development programme mapped

to the Researcher Framework that will support you to market yourself and your skills for a rewarding career. You will get access to: Exclusive workshops on diverse topics suitable for a research career, Mentoring, Employability Profiling and Careers Support.

Graduates will also have the opportunity to enhance their knowledge and career prospects further using the MRes as a Launchpad to undertaking a PhD programme.

Entry requirements

- Minimum of an upper second class honours degree or equivalent in a wide range of subjects. In exceptional circumstances an applicant may be admitted to the degree who does not possess the requirements mentioned, but who has substantial relevant work experience.
- IELTS 6.5 overall, with a minimum of 6.0 in each subtest (Reading, Listening, Writing and Speaking) or equivalent.

Fees

Band 2: UK/EU £10,000 International: £22,650






Loughborough
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Institute for Digital Technologies

研究型硕士:数字技术专业

学制:全日制一年,或业余最多四年

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在数字技术专业的研究型硕士生将会得到在互联网、电信和多媒体技术等研究领域内顶级学者的指导。研究型硕士专业将使具有研究热情的学生能拓宽技能、集中兴趣并为进一步的 PhD深造或未来职业生涯打好基础。

入读拉夫堡大学伦敦研究生院的研究型硕士将使你拥有吸引人的研究生生活。此研究型硕士专业经精心设计,将赋予毕业生以严格的研究和分析能力,以便他们能在所从事的行业和领域升入高级的研究职位。

研究型硕士将会探索研究过程,并发现一系列学科的有经验的研究人员所使用的设计、惯例和研究方法。研究型硕士更强调个人发现新的知识和拓展自己的研究专长。

除了要完成一个主要的研究项目外,所有研究型硕士生还将修完一些其它课程,比如:合作研究项目,研究设计、惯例和伦理,定量研究方法,定性研究的基础。

职业前景

在英国和全球的高价值产业中,对研究技能的需求非常大。在学习本专业的课程外,研究生们将能够获得一套根据个人特点而设计的符合英国“研究员体系”的专业培养计划,以便支持他们为获得有价值有意义的职业生涯而更好的推销自己和展示自己的能力。

通过利用研究型硕士作为开始博士学习的跳板,毕业生们将有机会进一步地增强他们的知识和职业前景。

入学要求

- ☐ 至少获得上二等荣誉学位 (2:1) 或同等学历,专业不限。对不具备上述要求但有坚实的相关工作经验申请者,将予以特殊录取。
- ☐ 雅思综合成绩 6.5, 单项(阅读、听力、写作及口语)最低 6.0分;或其它英语考试的同等水平

学费

英国本土/欧盟学生: 10,000英镑, 国际学生: 22,650英镑





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MSc Cyber Security and Big Data

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This programme will provide students with a comprehensive understanding of the challenges relating to cyber security and big data, and how these issues can affect society. You will develop knowledge and expertise in network security, cryptography and big data analytics, providing you with employment skills essential to the cyber security and big data industry and other related sectors.

Programme aims

- Acquire comprehensive knowledge in cyber security, cryptography and big data systems
- Develop expertise in securing digital assets, protecting networks and enhancing privacy
- Gain deep insights into machine learning, data science and analytics for added-value

Key module topics

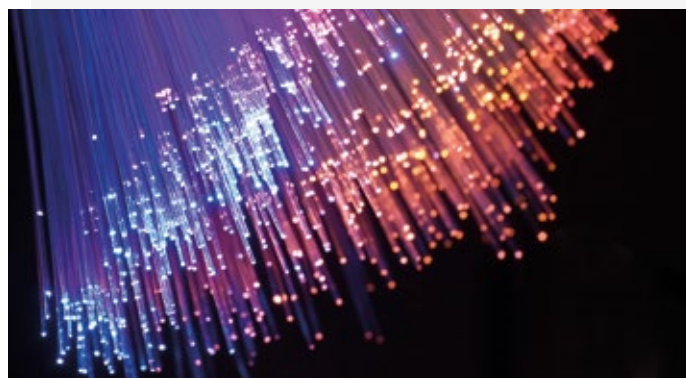
- Network security
- Applied cryptography
- Digital forensics
- Principles of data science
- Advanced big data analytics

Career prospects

- Security analysts and consultants
- IT system architects
- Data analysts and scientists
- Large businesses, SMEs and Governments

Entry requirements

- Lower Second Class Honours (2:2) in Electronics, Communications, Computing, Physics, Mathematics
- IELTS 6.5 overall, min. 6.0 in each subtest



—
“Learn cutting-edge technologies to become an expert in cyber security and big data analytics”
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专业目标

- ☐ 使学生获得网络安全、信息保密及大数据系统领域的综合知识
- ☐ 拓展学生在保护数字资产、巩固网络安全以及增强用户隐私保护方面的专业知识
- ☐ 并且深刻理解机器学习和数据科学, 进行数据的增值分析和发掘

主要专业课程

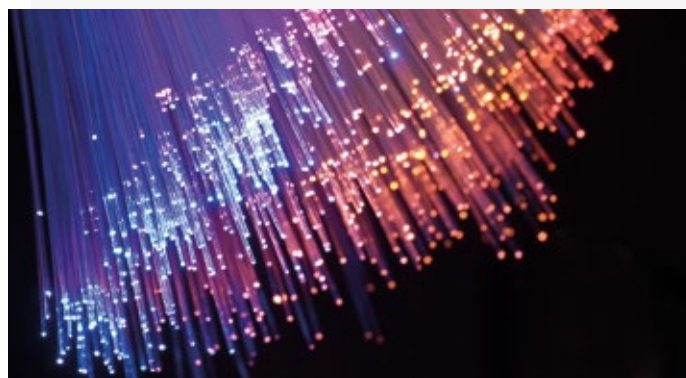
- ☐ 网络安全
- ☐ 应用加密学
- ☐ 数字取证技术
- ☐ 数据科学原理
- ☐ 先进大数据分析技术

职业前景

- ☐ 学生可在各类大型公司、中小企业、企事业单位和政府机构从事下述各类工作:
- ☐ 网络安全分析和顾问
- ☐ IT系统设计
- ☐ 数据分析及发掘

入学要求

- ☐ 二等(2:2)或以上荣誉学位 本科电子、通信、计算机和信息类专业, 以及物理和数学专业
- ☐ 雅思综合成绩 6.5, 单项(听力、阅读、写作及口语)最低 6.0



“学习尖端的网络安全和大数据技术,
成为网络安全和大数据分析方面的专家”




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MSc Mobile Communication Systems

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This programme is aimed at providing knowledge and expertise in the latest mobile and wireless communications technologies driving the evolution of mobile Internet. You will gain advanced knowledge of broadband, mobile and wireless communication networks, as well as future internet and related areas.

Programme aims

- Acquire advanced knowledge in mobile communication systems including 3G/4G/5G technologies
- Develop expertise in Internet-based mobile communication networks
- Build skills to understand, analyse and solve problems in mobile communication systems

Key module topics

- Mobile and wireless networks
- Communication networks
- Cloud technologies
- Internet of things
- Media processing and coding

Career prospects

- Telecom and mobile operators
- Telecom and networking equipment providers
- Internet service providers
- Network system architects
- Research and development

Entry requirements

- Lower Second Class Honours (2:2) in Electronics, Communications, Computing, Physics, Mathematics
- IELTS 6.5 overall, min. 6.0 in each subtest



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“Gain a thorough understanding and essential skills in Advanced Mobile Communication Technologies”
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Loughborough
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Institute for Digital Technologies

移动通信系统专业硕士

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本专业旨在提供推动移动互联网不断演化和发展的移动及无线通信技术的最新专业知识和技能。学生将会获得宽带、移动及无线通信网络和未来互联网及相关领域的先进知识。

专业目标

- ☐ 使学生获得有关移动通信系统的最新知识, 包括3G/4G/5G移动通信技术
- ☐ 拓展学生在基于互联网的新一代移动通信网络方面的专业造诣
- ☐ 培养学生理解、分析和解决移动通信系统领域问题的能力

主要专业课程

- ☐ 移动宽带和无线网络
- ☐ 互联网和通信网络
- ☐ 云技术及系统
- ☐ 物联网技术及应用
- ☐ 媒体处理及编码

职业前景

学生可在下述（不限于此）各类行业从事相关专业工作：

- ☐ 电信及移动运营商
- ☐ 电信及网络设备供应商
- ☐ 互连网络服务提供商
- ☐ 网络系统设计
- ☐ 研究和开发

入学要求

- ☐ 二等(2:2)或以上荣誉学位 本科电子、通信、计算机和信息类专业, 以及物理和数学专业
- ☐ 雅思综合成绩 6.5, 单项(听力、阅读、写作及口语) 最低 6.0



“全面理解先进的移动通信技术，
掌握有关移动通信的基本技能”





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Institute for Digital Technologies

MSc Digital Creative Media

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This programme focuses on the gaming technologies, media production, as well as creative media design and practices, which are all taught by the leading experts in the area. You will also benefit from first-hand experience in 3D creative media and studio environments, all of which will provide a unique opportunity to engage with advanced research motivated problems in the exciting topics related to digital creative media.

Programme aims

Providing students with leading edge skills and advanced knowledge in

- Media production
- Creative industries
- Gaming technologies
- Interactive user experiences
- Immersive technologies

Key module topics

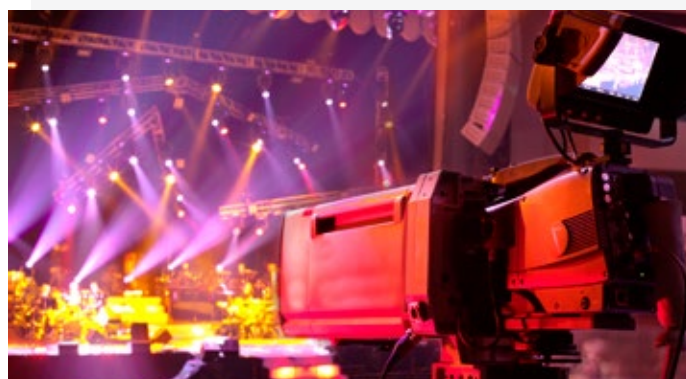
- Media design and production
- Media and creative industries
- Gaming technologies and systems
- Advanced 3D media environments
- Media cloud applications and services

Career prospects

- TV, film and music studios
- Entertainment media companies
- Application development
- Media and technology consultancy
- Advanced research opportunities

Entry requirements

- Lower Second Class Honours (2:2) in Electronics, Communications, Computing, Physics, Mathematics
- IELTS 6.5 overall, min. 6.0 in each subtest



“The future of the media industry depends increasingly on the generation of creative and innovative ideas and knowledge”



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数字创意媒体专业硕士

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数字创意媒体专业由该领域的顶级专家施教，专注于游戏技术、媒体制作，以及创意媒体的设计和实践。学生还将受益于从3D创意媒体环境和创意工作室所获得的第一手经验。所有这些都将为学生提供一个独特的机会，使他们参与到和数字创意媒体相关的高级研究课题中来。

专业目标

在下面各领域为学生提供尖端的技术和先进的知识：

- ☐ 数字媒体制作
- ☐ 创意媒体行业
- ☐ 电子游戏技术
- ☐ 互动式用户体验
- ☐ 场景拟真技术

主要专业课程

- ☐ 媒体设计与制作
- ☐ 媒体与创意产业：背景和实践
- ☐ 电子游戏技术和系统
- ☐ 先进3D媒体环境
- ☐ 媒体云应用和服务

职业前景

学生可在下述（不限于此）各类行业从事相关专业工作：

- ☐ 电视、电影及音乐工作室
- ☐ 娱乐媒体制作公司
- ☐ 媒体应用开发
- ☐ 媒体技术咨询
- ☐ 媒体系统和技术研究

入学要求

- ☐ 二等(2:2)或以上荣誉学位 本科电子、通信、计算机和信息类专业, 以及物理和数学专业
- ☐ 雅思综合成绩 6.5, 单项(听力、阅读、写作及口语) 最低 6.0



“媒体行业的未来越来越依赖于具有创新性及创造性的构想和知识之产生”





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MSc Internet Technologies with Business Management

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This programme aims to develop outstanding, business-minded technologists who will lead the future of the internet. You will discover the latest advances in internet systems and hear from leading experts in the field. Each module will support you in the development of new thinking and skills, so that you can design the processes, architectures and business models of tomorrow.

Programme aims

- Acquire knowledge in Internet, clouds, smart systems and applications
- Obtain knowledge and understanding of the Internet service business management
- Combine technology skills with innovation process and enterprise opportunities

Key module topics

- Internet and communication networks
- Innovation management
- Cloud technologies
- Internet of things
- Entrepreneurship

Career prospects

- Internet and cloud service providers
- Telecom and mobile operators
- App design and developers
- Large industries, SMEs, start-ups
- Research and development

Entry requirements

- Lower Second Class Honours (2:2) in Electronics, Communications, Computing, Physics, Mathematics
- IELTS 6.5 overall, min. 6.0 in each subtest



—
*“Learn how to combine internet
technologies with important
business ideas”*
—



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Institute for Digital Technologies

互联网技术与商业管理专业硕士

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本专业旨在培养杰出的、具有商业头脑的、能领导未来互联网的技术人才。学生将会了解互联网系统的最新进展，并聆听在该领域领先的专家授业。每门课程均有助于学生开发新的思维和技能，以便其可以设计未来互联网商务的流程，架构和商业模式。

专业目标

- ☐ 使学生获得互联网、云计算、智能系统及应用等领域的知识
- ☐ 学习和理解关于互联网服务商务管理的知识
- ☐ 将技术技能与创新过程和创业进取机会相结合

主要专业课程

- ☐ 互联网和通信网络
- ☐ 创新管理
- ☐ 云技术和系统
- ☐ 物联网及应用
- ☐ 创业

职业前景

学生可在下述（不限于此）各类行业从事相关专业工作：

- ☐ 互联网及云服务提供商
- ☐ 电信及移动通信运营商
- ☐ 应用设计与开发机构
- ☐ 大型公司、中小企业及新兴企业
- ☐ 研究和开发部门

入学要求

- ☐ 二等(2:2)或以上荣誉学位 本科电子、通信、计算机和信息类专业, 以及物理和数学专业
- ☐ 雅思综合成绩 6.5, 单项(听力、阅读、写作及口语) 最低 6.0



“学习如何将互联网技术和重要的商务理念相结合”





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Institute for Digital Technologies

Networks, IoT and Cyber Security Research

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Intelligent design, control and optimization of future communication networks and IoT systems, and securing of digital assets accessible on networks from cyber threats.

ADVANCED 5G SYSTEMS

Resource optimisation

Collective awareness
platforms

Reconfigurable
networks, SDNs

Edge computing
Fog networking

INTERNET OF THINGS

Service discovery,
WoT and semantic
data processing

Reconfigurable IoT

Interoperable
connectivity

Efficient lightweight
signalling

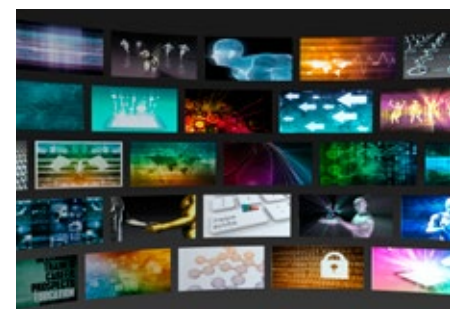
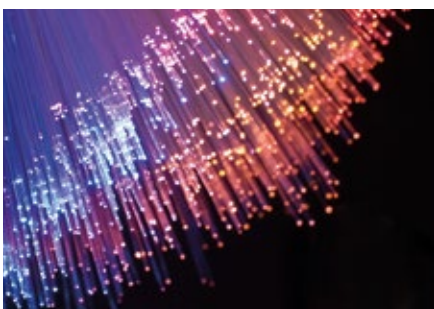
CYBER SECURITY

Cryptography and
digital forensics

Secure communication
protocols

Identification and
authentication

User data privacy,
integrity and resilience





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通信网络、物联网及
网络安全研究

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致力于未来通信网络和物联网系统的智能设计、控制和优化;保护网络数字资产免于网络威胁.

先进5G通信系统

物联网

网络空间安全

网络资源优化

服务发现、
WoT 及语义数据处理

密码学及数字取证技术

集体意识平台

可重构物联网

安全通信协议

可重构及软件定义网络

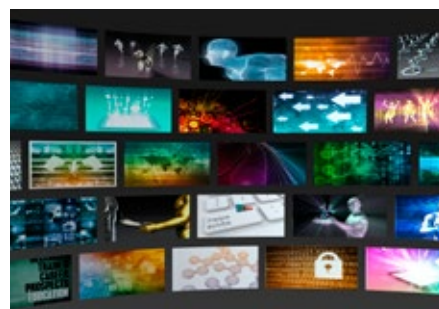
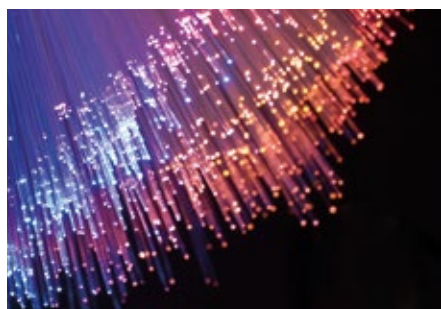
互操作连接

用户身份及认证

边缘计算和雾网络

高效轻量级信令

用户隐私、
数据完整性及抑扰







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**Interactive Media
Systems Research**

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Interactive media systems research targets TV, gaming, telecommunication, education and healthcare systems.

AUDIO-VISUAL COMMUNICATION SYSTEMS

Capturing, processing,
and coding of
a/v signals

Error resilient
transmission methods

Multi-channel
audio processing

Multi-view 3D
media applications

VISUALISATION

Cross-modal data
representation

Multidimensional data
visualisation

Unstructured
multi-media
visualisation

Audio-video
rendering systems

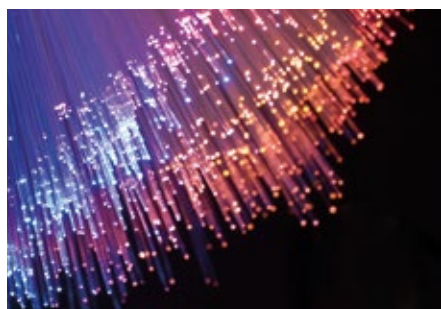
INTERACTIVE VIRTUAL AND AUGMENTED WORLDS

Multi-modal gestures
based interaction

360° real and
graphics media

Remote collaborative
applications

Immersive
storytelling





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交互式媒体系统研究

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针对电视、电子游戏、电信、教育及医疗保健系统的交互式媒体系统研究.

音视频通信系统

数据可视化

交互式虚拟及增强现实

音视频信号的获取、
处理和编码

跨模态数据表达

多模态手势互动技术

抗差错传输方法

多维数据可视化

360° 媒体制作

多声道音频处理

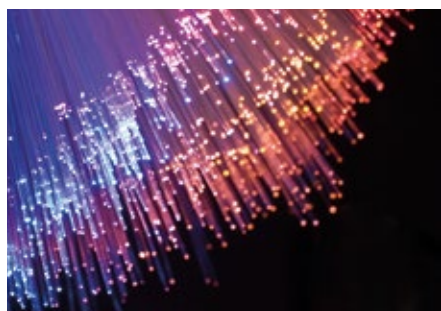
非结构化多媒体可视化

远程协作应用

3D多视点应用

音频-视频呈现系统

拟真故事叙述







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Smart Systems Research

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Dynamic control of systems by way of sensor data processing, perception and understanding of processed data for intelligent reaction and future event prediction.

INTELLIGENT MOBILITY

Multi-dimensional, multi-modal
signal processing

Noise Reduction

Source Separation

Dimensionality
Transformations

Dynamic Range
Compression

BIG DATA ANALYTICS

Autonomous perception
and prediction

Machine Learning

Sensor Data
Understanding

Prioritising Data

Future State
Prediction

ASSISTED LIVING

Multi-objective optimisation
based intelligent reaction

Intelligent Mission
Planning

Reaction to Status
Change

Optimisation
Techniques

Artificial Intelligence

SMART SURVEILLANCE



SMART CITIES



SMART HOMES & GRID







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智能系统研究

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将传感器数据处理及对处理数据的感知和理解用于智能反应和未来事件预测的动态控制系统.

智能交通

多维度多模态信号处理

信号降噪处理

信号源分离

维度变换

动态范围压缩

智能监控



大数据分析

自主感知和预测

机器学习

传感器数据理解

数据优先化

未来状态预测

智慧城市



辅助生活

基于多目标优化的智能反应

智能任务规划

状态变化反应

多目标优化技术

人工智能

智慧家居 智能电网

