# 清华大学 信息科学技术学院
School of Information Science and Technology, Tsinghua University

## 学院简介

清华大学信息科学技术学院（以下简称：信息学院）组建于 1994 年，目前由 4 个系、3 个研究实体、1 个国家示范性软件学院组成，有 1 个国家集成电路人才培养基地、2 个国家工程技术研究中心和 4 个国家工程实验室，是科技部批准组建的 6 个国家研究中心之一"北京信息科学与技术国家研究中心"（以下简称：信息国家研究中心）的具体依托单位。信息学院是清华大学规模最大的学院之一，拥有 7 个一级学科，22 个二级学科，6 个博士后流动站；设有电子信息科学与技术、微电子科学与工程、计算机科学与技术、自动化、软件工程 5 个本科专业；现有事业编制教职工 561 人（教师 467 人，教学辅助人员 94 人），在校学生 7098 人（本科生 2975 人，硕士生 2076 人，博士生 2047 人）。
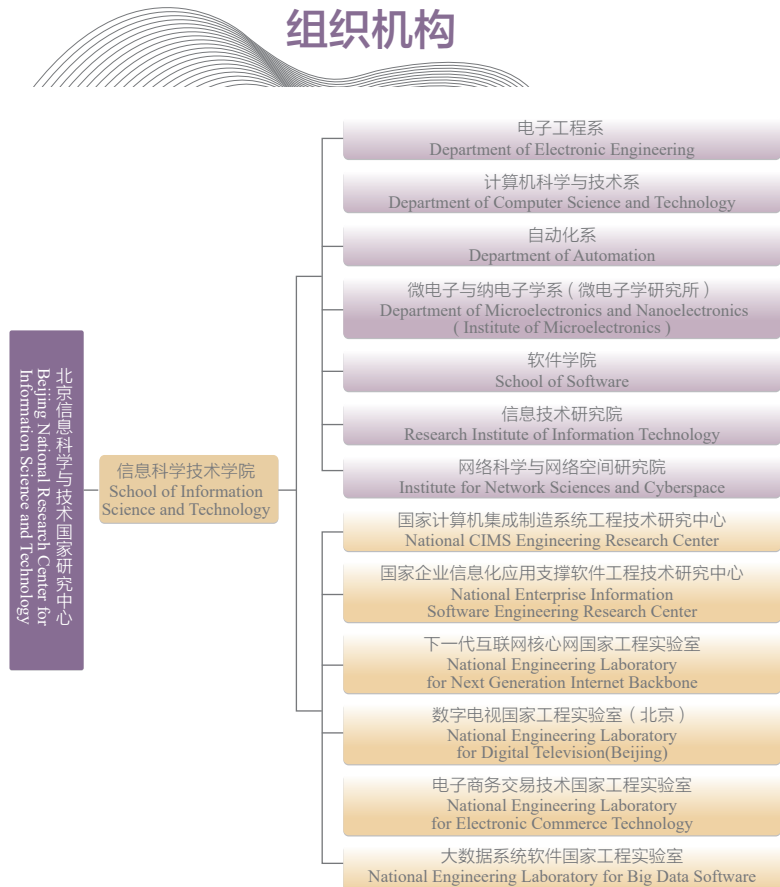
院长 戴琼海

党工组长 金德鹏

## 组织机构

信息科学技术学院
School of Information Science and Technology

北京信息科学与技术国家研究中心
Beijing National Research Center for Information Science and Technology

- 电子工程系
  Department of Electronic Engineering
- 计算机科学与技术系
  Department of Computer Science and Technology
- 自动化系
  Department of Automation
- 微电子与纳电子学系（微电子学研究所）
  Department of Microelectronics and Nanoelectronics（Institute of Microelectronics）
- 软件学院
  School of Software
- 信息技术研究院
  Research Institute of Information Technology
- 网络科学与网络空间研究院
  Institute for Network Sciences and Cyberspace
- 国家计算机集成制造系统工程技术研究中心
  National CIMS Engineering Research Center
- 国家企业信息化应用支撑软件工程技术研究中心
  National Enterprise Information Software Engineering Research Center
- 下一代互联网核心网国家工程实验室
  National Engineering Laboratory for Next Generation Internet Backbone
- 数字电视国家工程实验室（北京）
  National Engineering Laboratory for Digital Television(Beijing)
- 电子商务交易技术国家工程实验室
  National Engineering Laboratory for Electronic Commerce Technology
- 大数据系统软件国家工程实验室
  National Engineering Laboratory for Big Data Software

## 信息学科群统计数据

### 学科建设

#### 一级学科

- 电子科学与技术
- 信息与通信工程
- 控制科学与工程
- 计算机科学与技术
- 软件工程
- 网络空间安全
- 集成电路科学与工程

#### 教师结构

11%
39%
50%

正高级职务 184 人
副高级职务 232 人
中级职务 51 人

### 教师队伍

截至 2020 年底，信息学院共有教师 467 人，有 186 人入选各类国家人才计划。
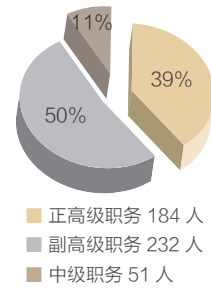
#### 杰出人才

| 杰出人才 | |
| --- | --- |
| 中国科学院院士 | 4 |
| 中国工程院院士 | 7 |
| 长江学者特聘教授 | 17 |
| 国家杰出青年科学基金获得者 | 44 |
| 中青年科技创新领军人才 | 15 |
| 青年长江学者 | 14 |
| 优秀青年科学基金获得者 | 48 |
| 青年拔尖人才 | 8 |

### 科学研究

#### 国家科技奖励

2011-2020 年，信息学院累计获得国家科技奖励 40 项（作为第一完成单位获得 30 项，作为参与单位获得 10 项），包括国家自然科学奖 9 项，国家技术发明奖 15 项，国家科学技术进步奖 16 项。

#### 论文专著专利

| 年度 | 论文 总数 | SCI | EI | 专著 | 专利 申请 | 授权 |
| --- | --- | --- | --- | --- | --- | --- |
| 2010 | 2459 | 451 | 761 | 18 | 528 | 255 |
| 2011 | 2113 | 501 | 774 | 18 | 560 | 309 |
| 2012 | 2000 | 523 | 585 | 24 | 545 | 426 |
| 2013 | 2158 | 680 | 847 | 27 | 647 | 380 |
| 2014 | 2136 | 689 | 667 | 21 | 565 | 317 |
| 2015 | 2142 | 639 | 814 | 23 | 497 | 371 |
| 2016 | 1546 | 735 | 882 | 15 | 522 | 477 |
| 2017 | 2054 | 744 | 687 | 22 | 761 | 511 |
| 2018 | 2102 | 662 | 765 | 17 | 745 | 520 |
| 2019 | 2091 | 734 | 未统计 | 13 | 858 | 566 |
| 总计 | 20801 | 6358 | 6782 | 198 | 6228 | 4132 |

#### 科研经费

经费（亿元）

7.8 7.5 6.78 6.75 6.98 7.85 8.21 12.56 13.73 14.95

2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 年度

## 信息学院特色工作

### 学生培养

**特色课程** 信息学院目前包含电子信息类、计算机类、自动化类 3 个本科大类。自 2003 年起信息学院面向本科生新生开设通识类基础课《信息科学技术概论》，内容涵盖信息科学技术的内涵、现状和对社会进步产生的作用，涉及信息学院相关学科研究方向介绍、未来信息技术发展趋势以及对其它学科的推动等。2020-2021 年秋季学季共有来自电子系、计算机系、自动化系、软件学院等 14 个院系 387 名学生选课。

选课人数

138 自动化系
82 电子系
65 计算机系
60 软件学院
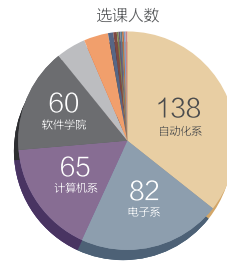
**研究生出席国际会议** 为支持信息学院学生出国参加高水平的国际学术会议，促进学生与国际顶尖学者直接交流与沟通，了解所在学科研究领域的最新进展和动态，2004 年，清华校友邓锋先生在信息学院捐资设立并启动研究生出席国际会议基金，2010 年更名为"登峰基金"。在基金发展过程中，先后获得了邓锋先生、清华大学、日本株式会社野村综合研究所、无锡儒安科技有限公司和赵仕勤先生的捐助。2011-2020 年，该基金共资助 1008 名研究生，受资助学生足迹遍布 40 余个国家和地区。

**高水平国际竞赛** 为进一步加大信息学院国际化人才培养力度，提升学生的学术水平与创新能力，自 2017 年 9 月起，信息学院扩大"登峰基金"支持范围，增设了高水平国际竞赛项目，用于支持信息学院学生参加高水平国际竞赛。截至 2020 年底，共资助高水平国际竞赛团队 9 个，受资助团队均在国际大赛中取得了优异成绩。

**学生奖励** 为支持清华大学的教育事业，奖励学生勤奋学习，培养更多的优秀人才，英特尔公司出资在清华大学设立了"清华大学—英特尔奖学金"，专门奖励在信息科学与工程技术领域内有独立工作能力，并具有科研能力和创新精神的信息学院优秀硕士生和博士生。2011-2020 年，共有 50 名分别来自电子系、计算机系、自动化系、微纳电子系和软件学院的优秀硕士生和博士生获得此项奖励。
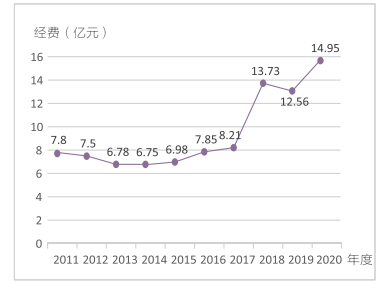
### 交流合作

**青年学者沙龙** 为建设清华大学跨学科合作创新文化，促进交叉合作，信息学院和信息国家研究中心 2020 年联合主办清华信息青年学者沙龙。本年度共举办学者沙龙 3 期。

**系列交叉论坛** 为深入探讨国际前沿交叉领域，推动跨学科交叉研究，信息国家研究中心主办"北京信息科学与技术国家研究中心系列交叉论坛"。本年度共举办系列交叉论坛 18 期。

**清华信息大讲堂** 清华信息大讲堂以支持信息学院教师邀请国内外知名学者和专家来校做学术报告的形式进行，自 2005 年启动以来，陆续受到了都科摩、诺基亚、IBM、日立、Intel、波音、NEC、三星公司等多家知名外企的捐赠。2011-2020 年，共举办学术报告 122 讲。

**清华信息学院—南加大工学院合作项目** 为加强清华大学与美国南加州大学两校教师之间的交流与合作，提高学生的国际交流能力和学术创新能力，两校共同的校友邓锋先生自 2006 年起在信息学院捐资设立"清华大学信息学院—南加州大学工学院合作项目"，主要用于支持清华—南加大双边教授论坛和清华—南加大本科生暑期交换项目等。2011-2020 年，双边教授论坛共举办 8 次，175 名教授参与了论坛交流；暑期交换项目共开展 10 期，来自两校 132 名本科生报名参加，其中 2020 年的项目以远程学术研修的方式开展。

# Statistics of the Disciplinary Cluster of Information Science

## Disciplinary Construction | Faculty

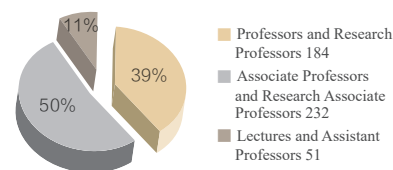### ✿ First-level Disciplines

Electronics Science and Technology

Information and Communication Engineering

Control Science and Engineering

Computer Science and Technology

Software Engineering

Cyberspace Security

Integrated Circuit Science and Engineering

By the end of 2020, there were 467 teachers in the SIST, 186 of whom had been selected into various national talent programs.

### ✿ Faculty Composition



- Professors and Research Professors 184
- Associate Professors and Research Associate Professors 232
- Lectures and Assistant Professors 51

### ✿ Outstanding Talents

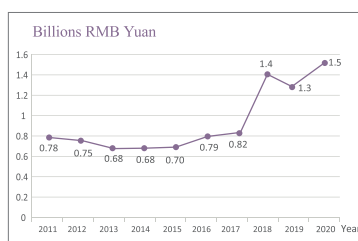| | |
|---|---|
| Academicians of the Chinese Academy of Sciences | 4 |
| Academicians of the Chinese Academy of Engineering | 7 |
| Distinguished Professors of the Yangtze River Scholars Program | 17 |
| Winners of National Science Fund for Distinguished Young Scholars | 44 |
| Young and Middle-aged Leaders in Scientific and Technological Innovation | 15 |
| Young Scholars of the Yangtze River Scholars Program | 14 |
| Winners of Outstanding Youth Science Foundation | 48 |
| Outstanding Young Talents | 8 |

## Research

### ✿ National Science and Technology Award

From 2011 to 2020, the SIST won a total of 40 national science and technology awards (30 completed as the first unit and 10 as the participating unit), including 9 national natural science awards, 15 national technological invention awards and 16 national science and technology progress awards.

### ✿ Papers/Books/Patents

| Year | Papers | | EI | Books | Patents | |
|---|---|---|---|---|---|---|
| | Total | SCI | | | Filled | Granted |
| 2010 | 2459 | 451 | 761 | 18 | 528 | 255 |
| 2011 | 2113 | 501 | 774 | 18 | 560 | 309 |
| 2012 | 2000 | 523 | 585 | 24 | 545 | 426 |
| 2013 | 2158 | 680 | 847 | 27 | 647 | 380 |
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| 2017 | 2054 | 744 | 687 | 22 | 761 | 511 |
| 2018 | 2102 | 662 | 765 | 17 | 745 | 520 |
| 2019 | 2091 | 734 | N/A | 13 | 858 | 566 |
| Total | 20801 | 6358 | 6782 | 198 | 6228 | 4132 |

### ✿ Research Funding



Billions RMB Yuan

0.78  0.75  0.68  0.68  0.70  0.79  0.82  1.4  1.3  1.5

2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 Year

# Work of the SIST

## Student Training

### ✿ Course Introduction

The School of Information Science and Technology (SIST) of Tsinghua University currently includes three major undergraduate categories: electronic information, computer science and automation. Since 2003, the SIST has been offering a general basic course "Introduction to Information Science and Technology" for undergraduate freshmen, which covers the contents, current situation and role of information science and technology in social progress, and involves the introduction of research directions of related disciplines in the SIST, the future development trend of information technology and the promotion of other disciplines. In the autumn semester of 2020-2021, 387 students from 14 departments, including the Department of Electronics, the Department of Computer Science, the Department of Automation and the School of Software selected this course.

### ✿ Fund for Postgraduate Students to Attend International Conferences

In order to support the students of the SIST to go abroad to participate in high-level international academic conferences, to promote direct communication between students and top international scholars, and to understand the latest developments and trends in their research fields, in 2004, Mr. Deng Feng, an alumnus of Tsinghua, donated money to set up the fund for postgraduate students of the SIST to attend international conferences. The Fund was renamed as the "Deng Feng Fund" in 2010. During the development, the fund has successively received donations from Mr. Deng Feng, Tsinghua University, Nomura Research Institute of Japan, Wuxi Ru'an Technology Co., Ltd. and Mr. Zhao Shiqin. From 2011 to 2020, 1,008 postgraduates were supported by the fund, who had presence over 40 countries and regions.

### ✿ Fund for Students to Attend High-level International Competitions

To further strengthen the training of international talents in the SIST and enhance students' academic performance and innovation ability, the SIST has expanded the support scope of the "Deng Feng Fund" since September 2017, adding high-level international competition programs to support students of the school to participate in high-level international competitions. By the end of 2020, nine student teams attending high-level international competitions had been funded, and all the funded teams had achieved excellent results in these competitions.

### ✿ Scholarship

To support Tsinghua University's education, encourage students to study hard and train more outstanding talents, Intel Corporation has funded the establishment of the "Tsinghua-Intel Scholarship" in Tsinghua University, which specifically rewards outstanding master's and doctoral students of the SIST with independent working ability, research ability and innovative spirit in the field of information science and engineering technology. From 2011 to 2020, a total of 50 outstanding master's and doctoral students from the Department of Electronic Engineering, Department of Computer Science and Technology, Department of Automation, Department of Microelectronics and Nanoelectronics, and School of Software respectively won the scholarship.

## Exchange Cooperation

### ✿ Young Scholars Forum

The SIST and the National Research Center for Information Science and Technology jointly hosted the Tsinghua Information Young Scholars Forum in 2020 in order to build a culture of interdisciplinary cooperation and innovation in Tsinghua University and promote cross-cooperation. This year, three scholars forums have been held.

### ✿ Cross-Disciplinary Forums

In order to deeply explore the international frontier and cross-disciplinary fields and promote cross-disciplinary research, the National Research Center for Information Science and Technology sponsors the "Beijing National Research Center for Information Science and Technology Cross-Disciplinary Forum". This year, a total of 18 cross-disciplinary forums have been held.

### ✿ Tsinghua Information Forum

The Tsinghua Information Forum is held in the form of supporting teachers of the SIST to invite renowned scholars and experts from home and abroad to deliver academic reports. Since its launch in 2005, it has received donations from several well-known foreign companies such as NTT DOCOMO, Nokia, IBM, Hitachi, Intel, Boeing, NEC and Samsung. From 2011 to 2020, 122 lectures on academic reports were rendered.

### ✿ Cooperation Project between the Tsinghua SIST and the University of Southern California (USC)

In order to strengthen exchanges and cooperation between faculties of Tsinghua University and USC, and improve students' competencies in international communication and academic innovation, Mr. Deng Feng, a common alumnus of both universities, has donated money to sponsor the "Tsinghua University SIST -USC Institute of Technology Cooperation Program" in the School of Information Science and Technology and Technology since 2006. His donation is mainly used to support the Tsinghua-USC Bilateral Professor Forum and the Tsinghua-USC Undergraduate Summer Exchange Program. From 2011 to 2020, the bilateral professor forum was held eight times, with 175 professors participating in the forum exchange; 10 summer exchange programs were held, in which 132 undergraduates from two universities participated, and the program in 2020 was carried out in the form of long-distance academic study.

SIST

2021

信息学院

📞 +86 10 62783081

📠 +86 10 62784047

✉ sist@tsinghua.edu.cn

ℯ www.sist.tsinghua.edu.cn

🏠 Beijing 100084, P.R.CHINA

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