

INSTITUTE OF  
SCIENCE  
AND TECHNOLOGY  
FOR BRAIN-INSPIRED  
INTELLIGENCE



**GLOBAL RESEARCH  
IMMERSION PROGRAM  
FOR YOUNG SCIENTISTS**



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<https://istbi.fudan.edu.cn/>

# Program Introduction

The Global Research Immersion Program for Young Scientists (GripS) is a funded summer research program that spans four to eight weeks. It aims to attract around 200 exceptionally talented and driven undergraduate students from various parts of the world to venture in an immersive research experience at four top universities at China (Fudan University, Zhejiang University, University of Science and Technology of China, and Nanjing University) in China's Yangtze River Delta region. GripS students will have the unique opportunity to actively engage in research programs, which includes laboratory experience at one of the four top universities, industry visits, excursions around the picturesque Yangtze River Delta region, immersive Chinese cultural activities, enlightening lectures by esteemed academicians, and a supportive mentorship component.

## Program Application

**Programme Date:** July 2024    **Duration:** 4weeks  
**Research Language:** English    **Application Deadline:** 17 March 2024  
**Website:** <http://grips.zju.edu.cn/>

## Program Information

1. Waived tuition and registration fees this year
2. Scholarship covering international travel and local accommodation
3. Extensive support for arranging travelling, VISA application, etc

## ISTBI, Fudan University

1. World-class research facilities for neuroimaging, neuromodulation, cognitive neuroscience, artificial intelligence
2. Innovative and creative research in brain sciences, big data, AI
3. International leading scientists

## Activities Highlights

1. Candidates are undergraduates with background in Neuroscience, Computer and Information Science, and Biomedical Engineering
2. One-week Summer School: Interdisciplinary Research between Brain and Intelligence Course by renown scientists
3. Brain and Intelligence Young Scientist Forum with Young scientists from University of Oxford, University of Cambridge, the University of Sydney, and Charitie Hospital
4. Mini-project: Team-working projects on forefront research in brain science, mental health or artificial intelligence
5. Team-building: group meetings, presentations, teacher lunch
6. Leisure: visiting of museums, city tours, Chinese culture activities

## Contact Us

For more information, please visit [istbi.fudan.edu.cn/l-nen](http://istbi.fudan.edu.cn/l-nen)

**For more information about program application, please contact:**

Dr Ningning Ma ([istbi\\_ic@fudan.edu.cn](mailto:istbi_ic@fudan.edu.cn))

**Program leaders at ISTBI:**

1. Professor Shouyan Wang ([Shouyan@fudan.edu.cn](mailto:Shouyan@fudan.edu.cn), <https://istbi.fudan.edu.cn/l-nen/info/1157/1632.htm>)
2. Associate Professor Deniz Vatansever ([deniz@fudan.edu.cn](mailto:deniz@fudan.edu.cn), <https://istbi.fudan.edu.cn/l-nen/info/1158/1812.htm>)
3. Associate Professor Xiaoqian Yan ([xqyan@fudan.edu.cn](mailto:xqyan@fudan.edu.cn), <https://istbi.fudan.edu.cn/l-nen/info/1158/1812.htm>)



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FUDAN UNIVERSITY

OF  
INSTITUTE OF  
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AND TECHNOLOGY  
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INTELLIGENCE



**Handan Campus**



**Jiangwan Campus**

## About FUDAN

Fudan University was established in 1905 as Fudan Public School. With a long and glamorous history, it becomes one of the first National Key Universities, and has developed into a comprehensive research university, with Departments of Philosophy, Economics, Law, Education, Literature, History, Science, Engineering, Medicine, and Management. According to the latest QS World University Rankings, the university ranks 34th in the world and 3rd in China. The university is comprised of 35 schools (or departments) and 17 affiliated hospitals. The university consists of four campuses including Handan, Fenglin, Zhangjiang and Jiangwan, covering a total area of 2.4391 square kilometers.

[www.fudan.edu.cn](http://www.fudan.edu.cn)



**Fenglin Campus**



**Zhangjiang Campus**



**Welcomed by**

**Professor Jianfeng Feng**

**Dean of ISTBI**

**About ISTBI**

The Institute of Science and Technology for Brain-inspired Intelligence (ISTBI), is an interdisciplinary research institution of Fudan University, one of the leading universities in China. It was launched in May 2015. The predecessor of ISTBI was the Centre for Computational Systems Biology, founded in 2008 and was one of the first international and interdisciplinary research centres in China. ISTBI covers several research fields including applied mathematics, statistics, computer science, informatics and neuroscience. The research carried out in ISTBI is interdisciplinary per se, with computational neuroscience playing a pivotal role. ISTBI aims to make significant contributions in the development of basic theories, core algorithms and key frameworks for artificial intelligence. It also has the aims of developing intelligent diagnosis and treatment systems for brain diseases, and establishing principles of cognitive neuroscience. Ultimately, ISTBI will contribute to the innovation and the development of an intelligence-oriented society.

“

*The brain is most mysterious, complex and inspiring, and attracts great interests of people in both brain and intelligence sciences. ISTBI constitutes a global research hub for scientists across neurosciences, mathematics, computing, clinical medicine and engineering, working together to tackle challenging questions within brain and brain-inspired intelligence sciences. The institute focuses on the interaction of intelligence science with normal cognition as well as psychiatric and neurological disorders, contributes to the development of fundamental theories on brain-inspired artificial intelligence, and translates this cutting-edge research into innovative technologies for diagnosis and treatment of brain diseases. Combining multi-disciplinary research from applied mathematics, computational neuroscience, cognitive neuroscience, and translational medicine, the institute aims to investigate neural mechanisms underlying cognition, emotion, consciousness, to develop brain-inspired theories and whole brain computational models and systems, and to explore the impact of interactions among cultural, developmental, environmental, genetic and cognitive factors on healthy humans and those with psychiatric and neurological disorders. Our ultimate goal is to understand, model and enhance human cognitive processes, develop technological solutions for the diagnosis, treatment and rehabilitation of neurological diseases and psychiatric disorders. The institute is dedicated to making significant, world-class contributions to the growing challenges in the enrichment of brain health worldwide, and to leading pioneering innovations for an intelligence-oriented society.*

”

Can machines think



2



3

# Research Areas



## Cognition and Neuromodulation

We explore the mechanisms of memory, decision-making, emotion etc, at micro, meso and macro scales with functional brain networks. We further conduct translational research of the precision medicine with intelligent neuromodulation, digital healthcare and big data modelling for diagnosis, treatment and rehabilitation of neurological and mental diseases.



## Bioinformatics and Neuroscience

We conduct the cross-disciplinary research between bioinformatics and neuroscience. The brain functions and mechanisms of neural information processing are further explored by integrating the bioinformatics modelling of gene, protein, synapse, neuroimaging and behaviors.



## Whole-brain Computation and Digital Brain

We develop computational models and platforms by simulating the neural network at whole-brain scales by assimilating functional, anatomical and neuro-physiological neuroimaging data. The digital twin brains (DTB) are further developed to illuminate neural circuits and cognitive functions, and uncover the pathogenic mechanism of brain diseases. The new theories of AI will be developed through the interdisciplinary research between biological and artificial brains.



## Brain-inspired Intelligence Technology and Application

By developing new algorithms and frameworks of intelligence science, we are laying the groundwork to develop personalized treatment for brain diseases. We are also developing intelligent perception, decision-making, control theories and new-generation unmanned systems that will be applied in autonomous vehicles, intelligent manufacturing, smart city.



## Neuroimaging and Translational Medicine

We are using AI algorithms and models of multi-omics and multi-modal biomedical data to develop biomarkers for drug development, health risk prediction, diagnosis and treatment technologies of neurological and mental diseases. We also promote innovations in neuroimaging technologies and translational medicine.



# Research Centre

## A Centre for Cognitive Neuroscience

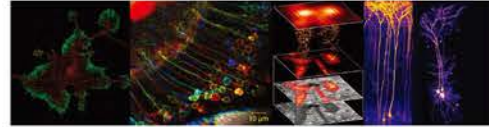
The Cognitive Neuroscience Center (CNC) is an integrative research platform that investigates the biological basis of cognition from micro-scale individual neurons to systems-level neural circuits. Combining multi-disciplinary research from cognitive, comparative, computational and clinical neurosciences with state-of-the-art neuroimaging, electrophysiological recording and behavioral testing methods, the CNC aims to characterize the neural mechanisms underlying perception, attention, motivation, decision-making, learning and memory, emotions and consciousness.

### RESEARCH DIRECTION :

Molecular mechanisms and neural circuits in cognitive functions

Computational modelling for cognitive processing

Cognitive neuroscience in neurological and psychiatric disorders



## B Centre for Computational Systems Biology

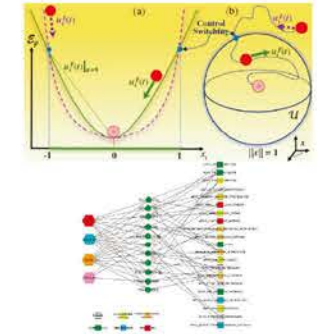
Interdisciplinary activities involving mathematics, physics, chemistry, and information science, have led to major developments in the life sciences. The Centre aims to establish a platform for computer-aided simulation, along with mathematical and physical analyses of the dynamics of life, based on the fusion of multiple disciplines including big data techniques and newly-developed experimental technologies.

### RESEARCH DIRECTION :

Computational neuroscience and neuromorphology

Nonlinear science and its applications to complex systems

Evolutionary biology and genetical modelling



## C Centre for Artificial Intelligence Algorithms Shanghai Institute of Artificial Intelligence Algorithms

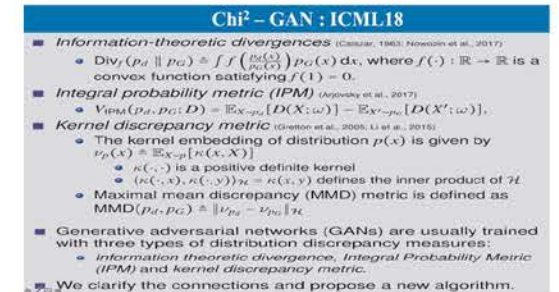
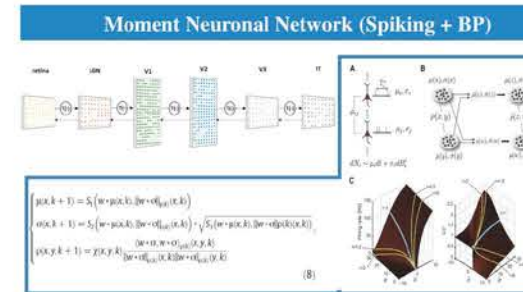
The Centre aims to develop modern mathematics and statistical methods based on principles of the brain to develop a new generation of artificial intelligence, especially neural network model at the whole brain scale through data assimilation methods and computational modeling. By constructing a network of whole brain electrical impulse neurons, the Centre strives to implement learning algorithms such as the algorithm of pattern recognition, attention, and reinforcement learning. For a given input and output electrical pulse array, we rely on the moment neural network framework to build a learning algorithm to implement a multi input and output model, which will consolidate the basis of mathematical statistics of artificial intelligence algorithms such as the algorithm of supervised learning, semi-supervised learning, and unsupervised learning and will promote the development of an intelligent algorithms library. In 2019, based on the core team of the center, Shanghai Institute of Artificial Intelligence Algorithms was established and unveiled at the 2019 World Artificial Intelligence Conference.

### RESEARCH DIRECTION :

Whole brain pulse network

Random pulse network learning algorithm

Learning algorithms and mathematical theories of artificial neural network

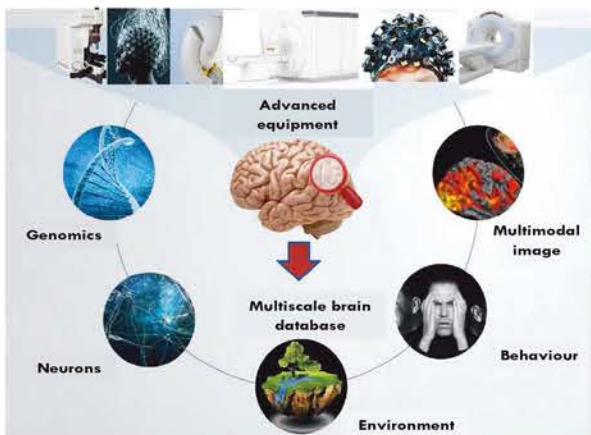


# Research Centre

## D Centre for Big Data of Biomedical Sciences Zhangjiang International Brain Biobank ( ZIB )

The Centre is devoted to building the largest multimodal, multiscale and multicenter datasets for biomedical science (brain science), and developing computational approaches in analyzing these datasets. The Centre promotes researches on precision medicine and personalized medical care for brain diseases, cancers, cardiovascular disease, etc.

### RESEARCH DIRECTION :



### Zhangjiang International Brain Biobank Cohorts

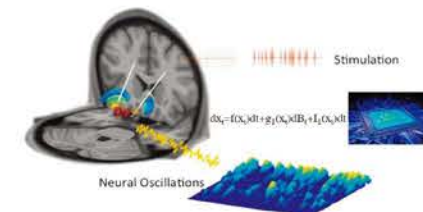
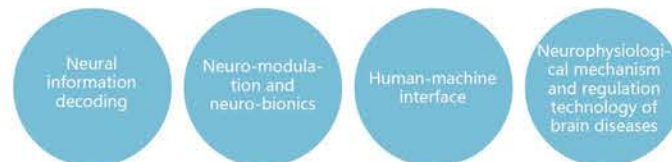
6 Cohorts, 15,000 Samples					
First episode schizophrenia	First episode depression	Stroke	Alzheimer's disease	Autism	Normal
Shanghai Mental Health Centre	Shanghai Institute of Neurology Hospital	Zhongshan Hospital	Shanghai 64 Hospital	Xinhua Hospital	Shanghai Brain Imaging Centre
Cases/Control 1000/1000	Cases/Control 500/500	Cases/Control 1000/1000	Cases/Control 1000/1000	Family Cohorts 300x3	Normal Individuals 5000
(2000 Brain imaging and genetic data)	(2000 Brain imaging and genetic data)	(2000 Brain imaging and genetic data)	(2000 Brain imaging and genetic data)	(1500 Brain imaging and genetic data)	(5000 Imaging and genetic data)



## E Centre for Neural and Intelligent Engineering

To improve the clinical treatment of some key neurological and psychiatric disorders, the Centre aims to develop the neural sensing and processing approaches to neuro-dynamics information, and explore the integration strategy of brain information and plasticity mechanisms of brain functions. By combining neural coding and intelligent theories, the Centre will develop neural sensing, neural modulating, neural computing technologies, and innovation in brain-intelligence technology. It will also build intelligent systems on-chip, and create a self-learning intelligent human-machine interface. Through research in intelligent neuro-modulation and neural-bionics, our goals are to provide intelligent devices and creative solutions to protect, improve and modulate the human brain.

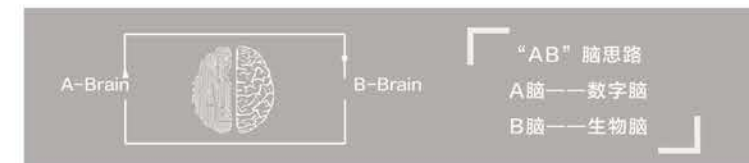
### RESEARCH DIRECTION :



## F Whole Brain Computation Platform

The mission is to simulate human cerebral functions by constructing a digital twin of an individual human brain through digital assimilation, which encompasses neurons, neurotransmitters and neural connections. We develop mesoscopic data assimilation theory for large-scale computational simulation of the brain, in order to generate novel algorithms for brain-inspired intelligence that allow multimodality integration. Implementing this project will lead us to the cutting edge of brain-inspired intelligence, revolutionary breakthroughs in brain-inspired algorithm and application, and acceleration of a new generation of AI theory.

### RESEARCH DIRECTION :





# Research Centre

## F Centre for Biomedical Imaging Zhangjiang Brain Imaging Centre ( ZIC )

In 2016, the Shanghai Municipal Government and Fudan University have invested RMB400M (equal to \$65M) to establish the Zhangjiang International Brain Imaging Centre (ZIC). With an area of 114,000 square-meters, ZIC has become the largest imaging platform for brain science and brain-inspired intelligence in China. ZIC is the home to the world's most advanced MRI instruments including an ultra-high-field 7T Siemens Terra MR scanner, a Siemens 3T Connectome MR scanner, a Siemens 3T Prisma MR scanner, and a Bruker 11.7T Biospec MR scanner. In addition, ZIC equips with a series of real-time brain function monitoring systems including a near-infrared spectrometer, an electroencephalography system, a magnetoencephalography system, and neuromodulation systems including transcranial direct current stimulation, transcranial magnetic stimulation, and transcranial focused ultrasound stimulation.

### RESEARCH DIRECTION :



Prisma 3T



Connectom 3T



Terra 7T



BioSpec 11.7T



## F Center for Population Neuroscience and Precision Medicine (PONS)

PONS integrates neuroimaging, cognitive neuroscience, (epi) genomics and epidemiological research with novel tools for environmental assessments, such as ecological momentary assessments using smart phone applications, social media analyses, and satellite-based remote sensing acquisitions. It aims at the identification of markers and brain mechanisms of risk and resilience for mental illness in different environmental contexts, such as pandemics, pollution, climate change, migration or urbanicity. This knowledge will be applied to develop neurobehavioural interventions targeted at causal brain mechanisms for prevention and early intervention of disease on a public health-relevant scale.

PONS coordinates a network consisting of cohorts of up to 195,000 people, including >25,000 neuroimaging scans in China, Europe, India and the United States, such as the European IMAGEN, STRATIFY and the Indian cVEDA cohort.

PONS works in close partnership with the Charite, one of Europe's largest university hospitals and research institutions, affiliated with Humboldt University and Free University Berlin, and collaborates with other leading research centres in Europe and the US, i.e. Cambridge University, USC, KCL and Emory University.

# Leading Scientists

( in alphabetical order )



**Jianfeng Feng**

Winner of the Royal Society  
Wolfson Research Merit  
Award  
Chair Professor of Shanghai  
National Centre for Mathe-  
matical Sciences



**Trevor Robbins**

Fellow of the Royal Society  
Fellow of the British  
Psychological Society  
Fellow of the Academy of  
Medical Sciences  
Winner of 2014 Brain Prize



**Edmund Rolls**

Fellow and Tutor in  
Psychology at Corpus  
Christi College, Oxford  
Research direction:  
Computational  
neuroscience.



**Barbara Sahakian**

Fellow of the British  
Academy  
Fellow of the Academy  
of Medical Sciences  
Research direction:  
Cognitive neuroscience.



**Gunter Schumann**

Research direction:  
Physiological  
psychiatry



**Valerie Voon**

Research direction:  
cognitive neuroscience,  
neuromodulation,  
neuroimaging, computa-  
tional psychiatry



**David Waxman**

Overseas Thousand Talents  
Program Professor of China  
2013 Friendship Award of the  
Chinese Government  
Member of the Board of  
Reviewing Editors, Science



**Xingming Zhao**

Professor  
Research direction:  
Artificial intelligence  
Data Mining



**Qibao Zheng**

Research direction:  
Brain-inspired  
intelligence

# Faculty

## Directors



Jianfeng Feng



Xiangyang Xue



Xiaohua Xie



Shouyan Wang

<p><b>Wei Cheng</b> Research Professor Research direction: Neuroimaging Statistic Modelling Psychiatry</p>	<p><b>Peng Ji</b> Research Professor Research direction: Nonlinear Dynamics Computational Systems Biology</p>	<p><b>Tianye Jia</b> Research Professor Research direction: Behaviour and Neuroimaging Genetics</p>	<p><b>Wenlian Lu</b> Professor Research direction: Neuroengineering Biomedical engineering</p>	<p><b>Qiang Luo</b> Research Professor Research direction: Computational Systems Biology</p>	<p><b>He Wang</b> Research Professor Research direction: Magnetic resonance imaging Medical image analysis</p>
<p><b>Shouyan Wang</b> Research Professor Research direction: Neuroengineering Biomedical engineering</p>	<p><b>Jie Zhang</b> Research Professor Research direction: Computational Systems Biology</p>	<p><b>Shanfeng Zhu</b> Research Professor Research direction: Artificial Intelligence and Big Biomedical Data Mining Machine Learning and Text Mining</p>	<p><b>Chunhe Li</b> Associate Professor Research direction: Computational Systems Biology</p>	<p><b>Jingqi Cheng</b> Associate Professor Research direction: Quantitative MRI of the Brain Functional MRI Molecular Imaging</p>	<p><b>Miao Cao</b> Young Principal Investigators Research direction: Human brain connectome Human brain early development with multimodal neuroimaging technology, neuroimaging</p>
<p><b>Weiyang Ding</b> Young Principal Investigators Research direction: matrix and tensor computation with applications</p>	<p><b>Yuwei Jiang</b> Young Principal Investigators Research direction: using fMRI, MEG, EEG, ECoG</p>	<p><b>Jian Pu</b> Young Principal Investigators Research direction: Machine learning and its application</p>	<p><b>Yuchuan Qiao</b> Young Principal Investigators Research direction: Image registration and its clinical applications, medical image analysis based on dMRI, PET and T1/T2 MRI for Alzheimer's disease</p>	<p><b>Hongming Shan</b> Young Principal Investigators Research direction: Machine learning, Medical Imaging, Radiomics, and Computer Vision</p>	<p><b>Zhuoyi Song</b> Young Principal Investigators Research direction: computational neuroscience systems neuron modeling neural coding biomimetic vision</p>
<p><b>Deniz Vatansever</b> Young Principal Investigators Research direction: Cognitive Neurosciences Brain Imaging</p>	<p><b>Xiaoqian Yan</b> Young Principal Investigators Research direction: uses neuroimaging</p>	<p><b>Xiao Xiao</b> Young Principal Investigators Research direction: Neural circuit and molecular mechanism of emotion and memory</p>	<p><b>Rong Zhu</b> Young Principal Investigators Research direction: computational neuroscience, reinforcement learning, statistical methods and applications</p>	<p><b>Xiao Chang</b> Young Principal Investigators Research direction: Clinical Neuroscience; Brain Connectome</p>	<p><b>Zhensen Chen</b> Young Principal Investigators Research direction: Magnetic Resonance Imaging, Medical Image Processing and Analysis, Vascular Disease</p>
<p><b>Fumin Jia</b> Young Principal Investigators Research direction: Neural circuit and neuromodu- lation; Brain computer interface</p>	<p><b>Hao Li</b> Young Principal Investigators Research direction: developing magnetic resonance imaging and image processing methods</p>	<p><b>Linbo Wang</b> Young Principal Investigators Research direction: studying the pathological mechanism</p>	<p><b>Y. Thomas Yang</b> Young Principal Investigators Research direction: Computational Genomics</p>	<p><b>Jing Wang</b> Young Principal Investigators Research direction: application of brain-computer interactive interface imaging technology in intelligent modulation of brain health</p>	<p><b>Zhiyuan Yuan</b> Young Principal Investigators Research direction: bioinformatics</p>

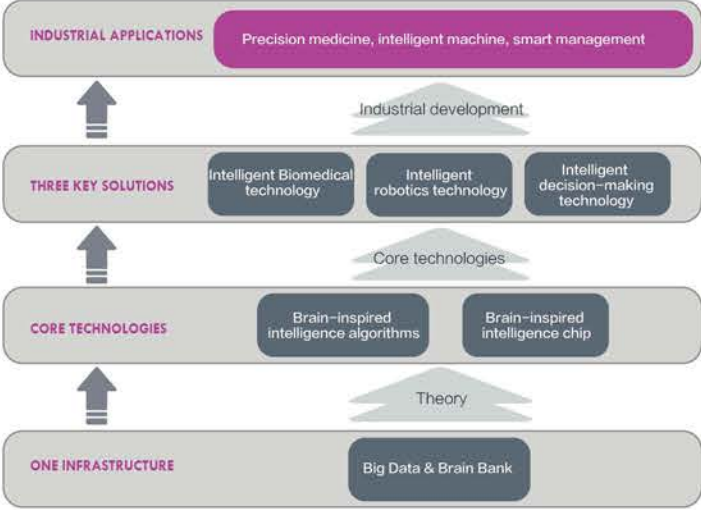


Since 2016, we have received over 1 billion CNY (= 146 million USD) funding for 65 national research projects and 42 provincial research projects.

We have received over 100 million CNY (= 14.6 million USD) funding for 42 enterprise-funded research projects.

### Brain and Brain-inspired Intelligence Key Program – Shanghai Brain Research Initiatives RMB 840 M ( \$119M )

In July 2018, the first Shanghai Municipal Brain and Brain-inspired Intelligence Major Project undertaken by Fudan University and Zhangjiang Laboratory with an implementation period of five years and a total investment amount of 840 million RMB was launched. Professor Ningsheng Xu, President of Fudan University and Academician of the Chinese Academy of Sciences, serves as the director of the project and Professor Jianfeng Feng, Dean of the Institute of Science and Technology for Brain-inspired Intelligence, Fudan University serves as the executive director. The project focuses on the construction of “One-two-three Project” ( One infrastructure, two core competencies and three key technologies) in brain and brain-inspired field, dedicated to making great breakthroughs in the field of intelligent technologies such as brain-inspired intelligence algorithms, intelligent diagnosis and treatment of brain diseases, brain-inspired intelligence chips, brain-inspired intelligence engineering, so as to promote industrial upgrading, improve people’s livelihood in Shanghai and promote the development of smart cities, which will without doubt contribute Shanghai to become an influential brain-inspired technology innovation centre in the world.



## High-level Scientific Achievements Consistently Emerging

Over the past five years, our team has made remarkable achievements in neuroscience, computational biology, computational neurology, artificial intelligence algorithms, intelligent diagnosis and treatment for brain diseases as well as other fields, publishing over 900 papers on world-top journals, including Nature, Cell, Nature Med, IEEE TPAMI, etc.





## Research-centred Education: Critical Thinking, Freedom of Mind and Challenge-oriented Strategy

The student is at the centre of the education at ISTBI. There is a focus on enabling students to develop their critical and analytical thinking skills, independent research skills, group work, problem solving and leadership skills to prepare them for their career. Education here at ISTBI is closely aligned to current research, often drawing on the interdisciplinary approach that has taken good advantage of Fudan's solid academic background in key disciplines such as mathematics, statistics, informatics, computer science, life sciences and basic medicine.

## Our Strengths



### Interdisciplinary Teaching

Multidisciplinary and multiplex cross-knowledge: applied mathematics, biomedical engineering, biophysics, computational linguistics, computational psychology, etc.

### International Academic Exchange

We have established the "Education Fund (CSG) for China-UK Exchanges in Intelligent Robotics" to cultivate our students with the vision of top international scientists by establishing partnerships with more than 20 internationally renowned universities and research institutes such as University of Cambridge and University of Oxford.

### Doctor Training Centres

National Key Laboratory of Computational Neuroscience and Brain-inspired Intelligence and other research centres in ISTBI together provide strong support for the cultivation of students.

### Entrepreneur and Practical Training

We have constructed an innovative practice platform for training talents by establishing joint laboratories and joint research centers with more than 10 enterprises and more than 30 hospitals, forming joint research projects and projects to promote in-depth innovation and industrial practice of talent cultivation.

## High-level International Collaborations

The Institute actively initiates and participates in international scientific cooperation programs, has collaborated with scientists from more than thirty internationally renowned universities, and established partnership with University of Cambridge, University of Oxford, Harvard University, King's College of London, Stanford University, and The University of Sydney, etc.

### International Cooperation Centre

- Overseas Expertise Introduction Centre for Discipline Innovation ( "111 Center" )
- The Joint Fudan-King's Centre for Population Neuroscience
- Brain and Intelligence Science Alliance
- Fudan-Cambridge Cognitive Neuroscience and Mental Health Institute (pending)

Harvard University  
Stanford University  
Massachusetts Institute of Technology  
University of Southern California  
University of Minnesota  
Salk Institute for Biological Studies  
Boston University  
New York University  
University of California  
Johns Hopkins University

University of Cambridge  
University of Oxford  
Imperial College London  
King's College London  
The University of Warwick  
The University of Edinburgh  
University College London  
Cardiff University

Belgian University  
Max Planck Institute  
Humboldt University of Berlin  
French National Centre for Scientific Research  
Swiss Federal Institute of Technology in Lausanne

The University of Sydney



# International Cooperation Centre

## Overseas Expertise Introduction Centre for Discipline Innovation ( "111 Center" )

The base of Computational Neuroscience and Brain-inspired Intelligence for Discipline Innovation, jointly applied for by ISTBI, the University of Cambridge and the University of Oxford was approved by the Ministry of Education and the State Administration of Foreign Experts Affairs in 2018. We establish the "Overseas Expertise Introduction Centre for Discipline Innovation" ( "111 Centre" ), promoting collaborative research in computational neuroscience and brain-inspired intelligence.







# International Cooperation Centre

## The Joint Fudan–King's Centre for Population Neuroscience

In 2018, Fudan University and King's College London jointly established the Centre for Population Neuroscience and Precision Medicine (PONS) to investigate the complexity and heterogeneity of behaviour and mental illness on a population level by identifying environmental and genomic factors that shape the structure and function of the human brain. PONS integrates neuroimaging, cognitive neuroscience, (epi)genomics and epidemiological research with novel tools for environmental assessments, such as ecological momentary assessments using smart phone applications, social media analyses, and satellite-based remote sensing acquisitions.



Joint academic and research activities



# International Cooperation Center

## Fudan-Sydney Brain and Intelligence Science Alliance (BISA)

The Brain and Intelligence Science Alliance (BISA) has been established as a platform to raise the research impact of both institutions through inter-disciplinary translational research in the fields related to data science, neuroscience and intelligence. The ultimate goal of BISA is to train research leaders, advance technology innovation and scientific research, and to secure practical applications for science and technology. The four main research areas of BISA are: Cognitive Neuroscience and Brain Disorders; Computational Neuroscience and Neural Engineering; Impact of AI on Ethics, Arts and Society; and Artificial Intelligence and Brain-Inspired Intelligence.



## Cambridge-Fudan Brain Health Institute (BHI)

In 2019, Fudan University and the University of Cambridge signed a MoA to facilitate academic collaboration in brain-inspired intelligence, cognitive neuroscience, mental health, ancient civilisation, future philosophy and other fields. The Cambridge-Fudan Brain Health Institute (BHI) is co-founded by the ISTBI and the University of Cambridge.



# 复旦大学-悉尼大学校际协议签署仪式

## MOU SIGNING CEREMONY BETWEEN FUDAN AND USYD



## Signing Ceremony

## The University of Cambridge & Fudan University



# Milestone of ISTBI

2008 / 03

The predecessor of ISTBI, the Centre for Computational Systems Biology, was established as one of Fudan's first Project 985 high-level research centres



2016

08 ISTBI inducted the first young principal investigators

12 Facility procurement for the imaging centre was approved

2018

02 "Key Laboratory of Computational Neuroscience and Brain-inspired Intelligence, Ministry of Education" was approved

07 "Shanghai Municipal Major Project on Brain and Brain-inspired Intelligence Research and Application" was approved



2020

04 Dean Jianfeng Feng was appointed as Deputy Director of Shanghai Center for Brain Science and Brain-inspired Technology

06 The National Key R&D Program of Revolutionary Technology "Neuromorphic Computing Assimilation Platform and a New Generation of Brain-inspired Intelligent Algorithm Theory" was approved

11 Fudan-FAW Nine- Chapters Algorithm Institute was established

2022

08 'Fudan 'Innovation China' Center for Brain-inspired Intelligence (International Collaboration and Innovation)' was approved

2015 / 05

ISTBI was officially established

Dean Jianfeng Feng led the first major project in Artificial Intelligence of brain science of the Shanghai Municipal Party Committee



ISTBI

2017

09 ISTBI enrolled the first postgraduates

10 Construction of Zhangjiang Fudan International Innovation Centre started, with brain and brain-inspired intelligence being the main mission

12 "Computational Neuroscience and Brain-inspired Intelligence Overseas Expertise Introduction Centre for Discipline Innovation", jointly applied for by ISTBI, the University of Cambridge and the University of Oxford, was approved

2019

07 Opening ceremony for Zhangjiang International Brain Imaging Centre



2021

04 Three faculty members were recognised as 'World's Top 2% Scientists 2020' in the field of neuroscience

07 Staged products of the "Shanghai Municipal Major Project on Brain and Brain-inspired Intelligence Research and Application" were released at the 2021 World Artificial Intelligence Conference

# Join us

- Distinguished Professor (Chair)

Applicants must have been internationally recognized and have outstanding academic achievements in brain-inspired artificial intelligence or related fields. Applicants must be capable of leading scientists and establishing a world-class research team. The appointed Distinguished Professors will become leaders or co-leaders of one of the six research centres and will, with their research teams, carry out work that achieves the mission of their centre. The Distinguished Professors also have the duties of recruiting and managing their teams.

- Principal Investigator/Research Fellow/Professor (Tenured)

Applicants must have high-level academic achievements in the field of brain-inspired artificial intelligence or related fields. Applicants can be scientists or engineers and should have a wide interdisciplinary vision have the potential to become a Chair Professor. The appointed applicants will carry out work under the direction of a Chair Professor of the ISTBI.

- Young Principal Investigator/Associate Research Fellow/Associate Professor (Tenure-track or Tenured)

Applicants should have excellent publications in related areas and be under 36 years of age. Applicants should be well-recognized by the international academic community, and have the potential to apply for the Young Thousand Talents Program or for an Outstanding Young Scholar of the NSF of China. The appointed applicants will carry out work either individually or cooperatively in the Chair Professor's research team.

- Postdoctoral Research Fellow

Applicants must hold PhD from well-known universities or research institutes with a solid foundation in mathematics, statistics, physics, informatics and computer science, neurobiology, materials, biomedical engineering, and robotics, etc. The appointed applicants will work in the area of brain-inspired intelligence and will enter a specific group affiliated to one of the six research centres to conduct research work.

- Adjunct Professor

Applicants are outstanding scientists from well-known universities, research institutes, and leading companies in related industries. Applicants should have a broad interdisciplinary vision and international peer recognition, and have the strong potential to collaborate with scientists of the ISTBI in scientific research and postgraduate education.

All individuals of tenure-track positions will be subject to an international academic evaluation after six years of employment. Successful individuals will be qualified to transfer to a tenured position and/or promote their academic qualifications to higher-levels. The qualifications of tenured positions could be Distinguished Professor, Professor, Research Fellow, and Associate Professor.

Applications can be submitted to the email address with the subject line containing the position applied for. Paper-based submissions are not initially necessary. An application should include:

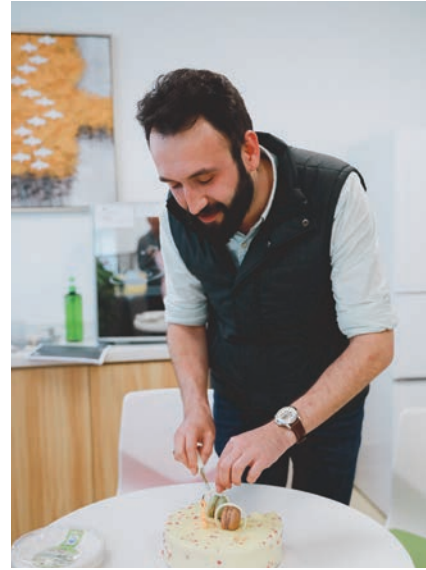
- (i) A cover letter that contains a brief research plan and how suited the plan is to the position applied for;
- (ii) A CV in English that contain a full list of publications and contact information of at least five full professors who can act as referees;
- (iii) Five representative works (include journal papers, monographs and patents);
- (iv) Certificate of highest degree

EMAIL : [istbi@fudan.edu.cn](mailto:istbi@fudan.edu.cn)

Tel : +86-21-6564-8171

- 1 Guanghua Building
- 2 Zhangjiang Library
- 3 Zhangjiang International Science and Technology Innovation Centre, Fudan University
- 4 Zhangjiang International Brain Imaging Centre





# ISTBI FAMILY

