

Curriculum Vitae of Li Zhaoping

Contact	<i>Email:</i>	li.zhaoping@tuebingen.mpg.de
	<i>Physical:</i>	University of Tuebingen, Max Planck Institute for Biological Cybernetics, Tuebingen, Germany
Education	Executive MBA	2001 — 2003: London Business School
	Ph.D.	1984 — 1989: California Institute of Technology, Physics. Thesis topic: “Modeling of the olfactory bulb and beyond” Thesis advisor: Prof. J. J. Hopfield.
	B. S.	1980 — 1984: Fudan University, Shanghai, Major: Physics
Personal	Nationality:	British

Professional history

10/18 –	Head of Department of sensory and sensorimotor systems, Max Planck Institute for Biological Cybernetics, Tuebingen, Germany
10/18 –	Professor, Computer Science Department, University of Tuebingen, Germany
10/07 –09/18	Professor, Computer Science Department, University College London
02/07 –09/07	Reader, Computer Science Department, University College London
07/01 –02/07	Reader, Psychology Department, University College London
8/98 –07/01	Reader, Gatsby Computational Neuroscience Unit, University College London.
9/97 – 7/98	Visiting scientist, Center for Biological and Computational Learning Department of Brain and Cognitive Sciences, MIT.
9/94 – 6/97	Assistant Professor, Computer Science Department, Hong Kong University of Science and Technology (HKUST).
6/94 – 8/94	Visiting scientist, Boston University Marine Program, Woods Hole, Massachusetts
8/92 – 6/94	Postdoctoral fellow, Computational Neuroscience Lab, Rockefeller University.
8/90 – 7/92	Member, School of Natural Science, Institute for Advanced Study, Princeton, New Jersey.
1/90 – 8/90	Postdoctoral fellow, Fermi National Laboratory for high energy physics, Batavia, Illinois.
6/86 – 9/89	Research assistant, California Institute of Technology, in physics of computation lab under Prof. J. J. Hopfield.
6/86 – 11/86	Research assistant, California Institute of Technology, in the electrophysiology lab of Prof. J. Bower.

6/85 – 6/86	Research assistant, California Institute of Technology and Stanford Linear Accelerator Center, in high energy physics experiments, under Prof. F. Porter.
3/84 – 6/84	Senior thesis research in theoretical physics in Fudan University, Shanghai, under Prof. Guan-Jiong Ni.

Other appointments and affiliations

2003-2005	Board of Directors, Computational Neuroscience Organization
2005-2008	Board of coordinators for GIACS (General integration of the application of complexity in Science), NEST (New and emerging science and technology) FP6 program
2010.1-2015.1	Adjunct Professor Tsinghua University, China
2015.3-	Adjunct Professor Beijing Normal University, China

Honour The only woman during 1979 to 1989 to win the first place in China's annual national physics competition, CUSPEA (China-US Physics Examination and Application). CUSPEA ran for eleven years, from 1979 to 1989. It was set up by the Chinese American Physics Nobel Laureate Tsung-Dao Lee, before China eased the way for individual/private citizens to apply for passports and apply to Western universities for graduate education. Each year during that period, among 800 pre-selected (by local competition) students from the top universities in China participated in a Physics competition for about 100 scholarships to pursue Ph.D. study in Physics in the US. These were provided by a consortium of US Physics departments and endorsed by the Chinese government.

Press Public communications of science via news media (e.g., BBC news, Scientific American, Bloomsburg, New Scientists) and public lectures since 2004, see <http://www.lizhaoping.org/zhaoping/press.html>

Grants and Support

Since Oct. 2018 –	Funding and support for equipment and for personnel from the Max Planck Society and from the University of Tuebingen to carry out long term research in computational and experimental neuroscience in Max Planck Institute for Biological Cybernetics, and in University of Tuebingen
Jan 2013-Dec. 2015	ESRC grant to support an EU collaboration with German and Dutch collaborators, £278k is allocated to me as one of the three PIs.
Since 2012 –	Discretionary research fund by the Gatsby Charitable Foundation for basic research in computational/experimental neuroscience to support research in my laboratory, £ 70k GBP annually since 2012 for 5 years.
2009-2015	Tsinghua University 985 fund, about 1,500,000 yuan (£175k), for use in Tsinghua university activities

2007-2010	Grant from Chinese Department of Education and the Bureau of Foreign Experts. Amount 8M yuan (~£950k), 'Mechanisms of Object Recognition: Evolution, Genetics and Cognitive Development', I was a co-principal investigator (co-PI) among a team of ten, in Beijing Normal University.
2007-2009	BBSRC foresight grant, £402k, one of four co-investigators
2005-2009	Competitive overseas collaboration grant of 6M yuan (~£700k). I was one of the six vision scientists in a consortium to share this grant to collaborate with the Key Laboratory of Cognitive Science in Chinese Academy of Science, Beijing
2004-2008	Competitive basic research grant of £340k for my laboratory on computational neuroscience from the Gatsby Charitable Foundation. I was the sole PI.
2002-2006	UK research council Basic Technology grant (administered by EPSRC) of £2.5M for 'reverse engineering the human visual system', one of the only 25 projects competitively selected UK wide from all disciplines of basic science and technology, including projects on topics such as quantum computing. I was one of the group leaders in a consortium of eight groups. £200k of the grant was allocated to my laboratory.
2001-2004	Research grant of £55K per year from the Gatsby Charitable Foundation to my laboratory on computational vision and neuroscience. I was the sole PI.
1998 –2007	Basic research grant of £1.1 m per year for ten years and renewable to the Gatsby Computational Neuroscience Unit from the Gatsby Charitable Foundation since 1998. I was one of the three original co-investigators and founders (with Prof. Hinton and Prof. Dayan) of the Gatsby Unit. (I left the unit in 2001).
2000	Scientific workshop grant of £15K from the Wellcome Trust for "cortical neural dynamics". I was the principal organizer
1996-1997	Basic research grant of HK\$362k, a competitive grant from Hong Kong research council, I was the principal and sole investigator on the project 'From images to surfaces in the primary visual cortex'.
1995-1997	Basic research grant of HK\$257k, a competitive grant from Hong Kong research council, I was the principal and sole investigator on the project 'Multidimensional visual coding in the brain'.
1984-1985	Institute full fellowship for first year graduate school in Physics at California Institute of Technology, USA
1982-1984	University scholarship (by academic competition), Fudan University, Shanghai.

Selected keynote speeches or invited talks

June 2025	Keynote speaker IBRO symposium: Neuro AI and Computational Neuroscience, at FENS Regional Meeting, Oslo Norway, 16-19, June 2025.
July 2020	Keynote speaker at the annual meeting of the Organization for Computational Neuroscience, July 18-22, 2020, https://www.cnsorg.org/cns-2020 , Melbourne, Australia
July 2020	Keynote speaker at 9th International conference on biomimetic and biohybrid systems, Freiburg, Germany, July 28-31, 2020, http://livingmachinesconference.eu/2020/
July 2018	Keynote speaker at Asian Pacific Conference on Vision (APCV), the most prestigious annual conference for vision science in the Asian pacific region since 2004, it is modelled after the prestigious annual ECVF (established since 1970s, see below) in Europe.
July 2016	Invited speaker at “Attention, value, and decision making” workshop in University of Marburg, Germany, 2016.
June 2016	Keynote monthly public science and technology seminar in Beijing for the Future Forum, the best known private and non-profit forum in China for promoting and communicating science and technology for the future of the society.
Dec. 2015	Keynote speaker at Second Monash Brain Function Workshop, Melbourne, Australia.
Dec. 2015	Invited speaker at Systems and Computational Neuroscience Conference in Australia (this is a regular/annual international conference organized in Australia, each year on a particular theme)
Aug. 2015	Invited speaker at Q-bio, the annual conference of quantitative biology and biophysics in USA (this conference has run for about 8 years in this fast-emerging field).
July 2015	Invited speaker at Asian-Pacific conference on vision, an annual conference modelled after the prestigious annual ECVF (established since 1970s, see below) in Europe.
Oct. 2014	Keynote speech at the annual Kongsberg Vision Meeting, largely for computational and experimental/clinical vision scientists in Scandinavia.
July 2014	Keynote speech at Gordon Reference Seminar, “Neurobiology of cognition” July, 2014, the seminar conference for junior researchers (by invitation through application only) associated with the prestigious Gordon Research Conference (by invitation only) by the same name.

Aug. 2013	Plenary speech at the plenary symposium “Visual perception meets computational neuroscience” at ECVF (European conference on visual perception), this is one of the two top (prestigious) international annual conferences in the vision community (established since 1970s)
Mar. 2007	Invited speech at Computational and Systems Neuroscience Conference (COSYNE), one of world’s best (top 1-2) annual conferences in its field.
Summer 2006	Keynote speech at Inaugural workshop on computational neuroscience, Queensland Brain Institute, Australia.
Jan. 2005	Keynote speech at the annual Japanese Cognitive and Computational Neuroscience Symposium on “Mechanisms of Brain and Mind”.
June 2002	Invited talk at “21st century physics and development in China”, a meeting organized and attended by top government officials (vice premier and education minister of the country) in Beijing.
Nov. 2001	Keynote speaker, At symposium “Vision, an inspiration for science” (Nov. 2001), one of the themes at NWO special year on mathematical biology 2001 in Utrecht University, Holland,
Since 1990s	Various invited lectures in international summer/winter schools, e.g., EU Advanced summer school on computational neuroscience, Okinawa summer course in computational neuroscience, Cold Spring Harbour summer course in vision, etc.

Textbook authorship

In 2014, I published a textbook *Understanding Vision: Theory, Models, and Data* (OUP). This is the only textbook to cover general topics in computational vision, the interdisciplinary area in between computer/machine vision (of interest to engineers) and biological vision (of interest to biologists and psychologists) to investigate and understand biological visual mechanisms and phenomena using more computational and quantitative approaches. This book is suitable for physical science (computer scientists, engineers, physicists) and life science researchers (psychologists and neuroscientists).

Selected University courses:

- (1) **“Understanding vision: theory, models, and data ”**, seminar and lecture courses since 2020, University of Tuebingen
- (1) **“Visual psychophysics”**, a practical training course in January 2020, University of Tuebingen
- (2) **“Understanding Biological Vision”**, a short summer semester course in Tsinghua University, Beijing, China, 2012, 2013.
- (3) **“Theoretical Neuroscience”**, I founded this course in Tsinghua University during my sabbatical year 2008-2009, and in 2009-2012 participated in teaching this course with other faculty members in Beijing.
- (4) **“Advanced Topics in Machine learning”**, a postgraduate semester course which I co-caught with a colleague in Computer Science, UCL, 2007-2008.

- (5) **"Theoretical Neuroscience"**, as a guest lecturer since for a post-graduate course in the Gatsby Computational Neuroscience Unit (University College London) for a few lectures each year.
- (6) **"Theoretical Neuroscience"** a tutorial course initiated and organized by myself to post-graduate students and postdocs from psychology, CoMPLEX, and anatomy departments, University College London, 2004. This course was recognized by students as very intense and rewarding, and led a postdoctoral fellow to change career direction to "theoretical neuroscience".
- (7) **"Research methods"**, a post-graduate course at Department of Psychology, University College London, with other co-instructors, Fall, 2001- 2004
- (8) **"Computational Neuroscience"**, a post-graduate course at Gatsby Computational Neuroscience Unit, UCL, Fall 1998-2000, co-instructor Peter Dayan. These were the first years of a brand new course, the development of which contributed significantly to the best seller textbook "Theoretical Neuroscience" by Dayan and Abbott published by MIT Press 2001.
- (9) **"Entropy, information, and the brain"**, in the Physics department at MIT for independent activity period, January, 1998. A one-month long new course for about 30 physics students and postdocs. Co-instructor: William Bialek, Course Organizer: Mehran Karder.
- (10) **"Computer Vision"**, A post-graduate course at Hong Kong University of Science and Technology (HKUST), 1995 and 1996. Was short listed for the best teaching award in the college, and commented years later as "giving me all the important essentials for my PhD thesis", by one of the students, Albert Chung, who went on to receive the "Sullivan Doctoral Thesis Prize" from the British Machine Vision Association for his PhD thesis in 2001 in Oxford University.
- (11) **"Pascal Programming"**, an undergraduate course at HKUST for about 200 freshmen, fall, 1995.
- (12) **"Computer fundamentals"**, an undergraduate course at HKUST for about 200 freshmen, fall, 1994.
- (13) **"Summer course on physics examination preparation"**, 1984, Fudan University, China.

Creating an International Summer School, in 2023

I led the creation of a brand new international summer school called Systems Vision Science Summer School in August 2023 in Tübingen, Germany, see <https://summerschool.lizhaoping.org>. It has been continuing annually, alternating between the virtual and physical forms. This was motivated by the need to speed up research progress in vision science by combining computational, psychological, and neuroscience approaches, I coined this combination of approaches for vision science as systems vision science (SVS). This need was also recognized by a group of like-minded colleagues who are leaders in the field and joined the summer school as invited speakers and lecturers. The summer school was unusual in its coherent curriculum to teach a flow of computational steps for vision in the brain, from the retina to higher brain regions along the visual pathway, combined with teaching the behavioral and neuroscience data used to inspire and test the computational theories. This is in contrast to the usual summer school format of having multiple experts teaching multiple, seemingly parallel, topics of the research field. Feedback from the students and faculty alike suggests an enthusiastic demand for future editions of this summer school, which can be hopefully fulfilled to promote SVS.

Invited teachings in International Summer Schools or Similar:

(1) Invited lecturer in various summer and winter schools across the world on computational neuroscience, including the online teaching in 2020, 2021, 2022, 2023, e.g., CNeuro2020 in 2020.

This includes for example Spring College in the Physics of Complex Systems, 2025, in International centre for theoretical physics, Triesa, Italy Mathematical Methods in Computational Neuroscience in Eresfjord, Norway 2024. European Advanced Course on Computational Neuroscience, every summer since 2004, in various sites within EU. Feedback from students and course organizers indicated me as one of their favorite lecturers. Other summer schools include: Cold Spring Harbor Laboratory computational vision summer course, 2014. International cognitive and computational neuroscience summer school in Beijing, 2012. Okinawa Computational Neuroscience course 2008, an international summer school in Japan, 2008.

(5) At Nordita Master Course in Physics, Denmark, summer 2006. Feedback from students and course organizer indicated me as one of their favorite lecturers.

(6) Mini-course on “Theoretical Neuroscience”, a summer course in Institute of Neuroscience in Shanghai, Chinese Academy of Life Sciences, July- August 2004. I was the course organizer and co-instructor with Prof. Dayan.

(7) EPSRC summer course on “Computer Vision”, at various sites within UK, From 2003–2008.

(8) NATO school on “Computational Neuroscience: Cortical Dynamics” the 7th course of International school E.R.Caianiello, October 2003 in Erice, Italy.

(10) Summer course “From Neuron to Network–Biophysically-Based Functional Models” in Santa Fe Institute in the US, July-Aug. 2003.

(11) “Neuroscience and Computation” trimester for post-graduate students and researchers, in Institute Henri Poincare, Paris, France, Spring, 2002.

(12) “Visual Attentional Mechanisms”, 5th course of International Summer school for post-graduate students and researchers, “Neural Nets E. R. Caianiello” at International Institute for Advanced Study (IIASS), Vietri, Italy, 2000.

(13) “Summer School of Neural information Processing” for post-graduate students and researchers, International Center for Theoretical Physics, Trieste, Italy 1999.

(14) “Physics of biological systems” summer school for post-graduate students and researchers, Nordita, Denmark, 1995.

(15) “Brain and Computation” summer school for university students and researchers, Fudan University, Shanghai, China 1993.

Teaching assistant for:

(1) “Collective Computation”, a post-graduate course on neural networks and related, in physics, engineering, computer science, and computational neuroscience at Caltech, 1988, under prof. J. J. Hopfield

(2) “Freshmen physics laboratory”, at Caltech, 1989, under prof. S. Frautschi.