Biography of Xiao-Li Meng



A Statistician's Life Devoted to Data

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Introduction



On 14 August 2012, Harvard University announced an important appointment on its official website: Xiao-Li Meng, Chair of the Department of Statistics, had been formally nominated as the new permanent Dean of Harvard's Graduate School of Arts and Sciences. The appointment made him the first Chinese scholar to serve as dean of a graduate school at one of the world's leading universities.

When the news reached Shanghai, Meng's achievements were already documented in the alumni records of Fudan University's School of Mathematical Sciences. Beside his name, listed as “1963–”, appeared the following account: “Elected to the American Academy of Arts and Sciences in 2020. Previously taught in the statistics departments of the

University of Chicago and Harvard University. Appointed Chair of Harvard's Department of Statistics in 2004, becoming the first scholar from mainland China to serve as a department chair at Harvard University."

From a fifteen-year-old student who entered Fudan University ahead of his peers to the first Chinese chair of Harvard's Department of Statistics, and ultimately to the first Chinese dean of Harvard's Graduate School of Arts and Sciences, Meng spent more than forty years following a remarkable path from mathematical prodigy to academic leader.

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Chapter 1
A Young Scholar from Shanghai: Entering Fudan University at Fifteen

Xiao-Li Meng was born in Shanghai in 1963. His father was a secondary school principal, and his family environment provided him with a strong foundation in education.

“I never attended high school,” Meng later recalled. In 1977, China reinstated the National College Entrance Examination. The following year, while still a junior secondary school student, Meng sat for an accelerated entrance examination and was admitted to the Department of Mathematics at Fudan University. At just fifteen years old, he became a university student. That year, approximately 5.7 million candidates participated in the national examination, with an admission rate of less than five per cent. For a fifteen-year-old to distinguish himself in such a competitive environment was itself evidence of exceptional academic ability.

At Fudan, Meng completed both undergraduate and postgraduate studies. After graduating with his bachelor's degree in 1982, he continued his education in the graduate programme in Probability and Statistics at Fudan University's Institute of Mathematics from 1984 to 1986. His six years at Fudan, comprising four years of undergraduate education and

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two years of postgraduate training, provided him with a rigorous academic foundation.

In later years, Meng repeatedly acknowledged the importance of his alma mater, stating: “Fudan was where my career began.” Through his direct involvement and efforts, Harvard began organising the Fudan–Harvard Summer School at Fudan University in 2009. Each year, dozens of Harvard students travelled to Shanghai to study and conduct research alongside Fudan faculty members and students. This educational bridge between Fudan and Harvard became one of Meng's most meaningful contributions to his former university.

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Chapter 2
Doctoral Studies at Harvard: From Model Answers to Real-World Problems

In 1986, Xiao-Li Meng arrived at Harvard University to pursue further studies. For a young scholar trained in mathematics in China, the initial adjustment was challenging. He later acknowledged that his English was weak and that he experienced considerable social isolation.

Nevertheless, he soon discovered that professors frequently regarded his answers and methods of presentation in mathematical statistics courses as exemplary models for other students. This ability reflected the rigorous mathematical training he had received during his six years at Fudan, where precision and logical consistency were expected to an exceptionally high degree.

Yet several courses that he had initially assumed would be straightforward proved unexpectedly difficult. Although his mathematical knowledge was strong, he lacked training in applying mathematical methods to real-world problems. These courses broadened his intellectual horizons, stimulated new ways of thinking and helped him move beyond the limitations of a purely mathematical education. This transition from theoretical mathematics towards practical problem-solving

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became one of the most important methodological developments of his subsequent academic career.

In 1990, Meng received his doctorate in Statistics from Harvard University. His doctoral dissertation, entitled Towards Complete Results for Some Incomplete-Data Problems, examined problems involving incomplete data, a subject that would remain central to his research throughout his career. His doctoral adviser was Donald Rubin, one of the most influential statisticians of his generation.

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Chapter 3
Academic Foundations: From Markov Chains to Missing Data

After completing his doctorate, Xiao-Li Meng held faculty appointments in the statistics departments of the University of Chicago and Harvard University. He published more than one hundred academic papers, covering subjects including Markov chain Monte Carlo (MCMC) algorithms, missing-data analysis and the application of Bayesian inference to high-dimensional statistical problems.

His academic achievements received major recognition from the international statistical community. In 1997, he was elected a Fellow of the Institute of Mathematical Statistics. In 2004, he became a Fellow of the American Statistical Association. In 2001, he received the COPSS Presidents' Award, one of the most prestigious honours in statistics. Sometimes described as the Nobel Prize of statistics, the award recognises scholars who have made outstanding contributions to the discipline.

In 2020, Meng was elected to the American Academy of Arts and Sciences. In recognising his achievements, the Academy described him as a leading researcher in modern data science, particularly for his contributions to statistical computational methodology, including new approaches to complex problems

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involving missing data and the implementation of Bayesian inference in high-dimensional settings.

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Chapter 4
Chair of the Department of Statistics: From a Handful of Students to Dramatic Expansion

In 2001, Xiao-Li Meng returned to Harvard University as a faculty member. In 2004, he became Chair of the Department of Statistics, becoming the first scholar from mainland China to hold a departmental chairmanship at Harvard.

During the following eight years, from 2004 to 2012, he promoted and witnessed what was described as the dramatic expansion of Harvard's Department of Statistics. The figures illustrate the scale of this development. The number of undergraduate statistics concentrators increased from single digits to more than seventy. Graduate student enrolment tripled, the number of faculty members doubled, and the department's core undergraduate courses experienced a substantial increase in popularity.

Harvard University observed that under Meng's leadership, the Department of Statistics had become one of the university's most interdisciplinary departments. Working with his colleagues, he helped extend the application of statistical methods far beyond the discipline's traditional research boundaries. Statistical analysis became increasingly integrated into fields ranging from genetics and aerospace science to linguistics, history and other areas of scholarship.

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Chapter 5
An Innovator: Teaching Statistics Through Happiness and Misery

One of Xiao-Li Meng's most distinctive teaching innovations at Harvard was an undergraduate course he personally developed, entitled Real-life Statistics: Your Chance for Happiness or Misery.

Beginning with statistical questions encountered in everyday life, the course introduced students to contemporary branches of statistics through accessible and engaging examples. Its subjects ranged from food choices and online dating to international finance and medicine. The course was noted for its humour and lively presentation, attracting enthusiastic responses from students and faculty members. It also received extensive coverage in Harvard's student newspaper and the monthly news publication of the American Statistical Association.

Meng introduced another highly unusual teaching approach in a course devoted to research paper preparation. He selected one of his own academic papers, which had been submitted repeatedly and rejected by several scholarly journals, as a case study.

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He asked students to examine every version of the manuscript, together with the editorial letters and reviewers' comments accompanying each rejection. In doing so, students could observe how he had responded to criticism, corrected weaknesses and progressively improved the paper over a period of ten years. They witnessed the entire process through which a repeatedly rejected manuscript eventually became what Meng regarded as one of the best and most widely recognised papers he had ever written.

Harvard University President Drew Gilpin Faust described Meng as a true innovator. She observed that, as a leader in an increasingly important field of research, he had devoted tremendous enthusiasm and energy to his work.

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Chapter 6
The First Chinese Dean: From the Statistics Department to the Graduate School

On 14 August 2012, Harvard University announced that Xiao-Li Meng had been formally nominated as the new permanent Dean of the Graduate School of Arts and Sciences (GSAS).

He became the first Chinese scholar to serve as dean of a graduate school at one of the world's leading universities. Harvard's announcement recognised his achievements during his tenure as Chair of the Department of Statistics, while also identifying his strong communication skills as an important qualification.

When asked about his reaction to the appointment, Meng said that he felt honoured. He explained that the new dean had been selected by a special committee composed of Harvard professors and that candidates had undergone interviews focusing primarily on their educational philosophies. Meng believed that the principal reason for his selection was the recognition he had received for his performance and achievements as Chair of the Department of Statistics.

From 2012 to 2017, Meng served for five years as Dean of the Graduate School of Arts and Sciences. During this period, he brought the interdisciplinary perspective and commitment to

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innovation developed during his departmental leadership into the administration of graduate education.

Harvard's Graduate School of Arts and Sciences is one of the university's largest graduate schools, responsible for programmes spanning the humanities, social sciences, natural sciences and numerous other academic disciplines.

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Chapter 7
Concluding Reflections: The Public Value of a Data Scientist

Xiao-Li Meng's academic life can be summarised through one word: data.

His research focuses on how information can be extracted from data. From Markov chain Monte Carlo algorithms to missing-data analysis, and from Bayesian inference to high-dimensional statistics, his work has contributed important methodological foundations to modern data science. The American Academy of Arts and Sciences recognised him as a leading researcher in the field.

Yet Meng's understanding of data extends far beyond computation alone. The interdisciplinary transformation he encouraged at Harvard's Department of Statistics helped bring statistical methods beyond the traditional boundaries of pure mathematics into genetics, aerospace science, linguistics, history and other fields.

His innovations in teaching further demonstrate his understanding of the deeper purpose of education. By introducing statistics through questions about happiness and misery, he made abstract concepts relevant to everyday life. By using his own repeatedly rejected manuscript to teach

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research methods, he demonstrated the importance of perseverance, critical reflection and continuous improvement.

These approaches reflected a fundamental educational philosophy: effective teaching is not merely the transmission of knowledge, but the awakening of curiosity.

From a young student in Shanghai who entered Fudan University at the age of fifteen to the first Chinese dean of Harvard's Graduate School of Arts and Sciences, Xiao-Li Meng spent more than forty years following an extraordinary journey from mathematical prodigy to academic leader.

His story illustrates an important principle of scholarship in the age of data: the most valuable researchers are not necessarily those who understand data in isolation, but those who use data to understand the world and education to inspire curiosity.

Xiao-Li Meng's career represents precisely this combination of rigorous statistical research, interdisciplinary thinking and a sustained commitment to education.

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