

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/49012> holds various files of this Leiden University dissertation.

**Author:** Gao, F.

**Title:** Bayes and networks

**Issue Date:** 2017-05-23

## ACKNOWLEDGEMENTS

---

This dissertation is the conclusion of my four-year PhD research. It reflects two lines of work—one in nonparametric Bayesian deconvolution and the other in statistical inference in preferential attachment network model.

First and foremost, I express my gratitude towards my advisor, AAD VAN DER VAART, who was, is and will never cease to be my inspiration and aspiration. He is the best PhD advisor that one could ever hope for. His knowledge of mathematics and statistics is encyclopedic. His taste in mathematics is deep and elegant. His scholarly attributes are overwhelming. He is the one that I always count on.

I am grateful to all members of the defense committee—RUI CASTRO, REMCO VAN DER HOFSTAD, JOHANNES SCHMIDT-HIEBER and HARRY VAN ZANTEN—for their time and efforts spent on me. I have enjoyed the friendship with both Remco and Rui since my master's study in Eindhoven. Discussions with both of them are always pleasant and helpful.

The four years would have been impossible to go through without the happy time that I spent with my colleagues at the Mathematical Institute and from other institutions in the Netherlands. Stéphanie has been most kind in always providing me with thoughtful advice. I appreciate the invitations by Suzanne and Laurens to their weddings and these were the only two times I have attended weddings outside China. Of course days would have been much slower if it were not for my favorite drinking buddies—Botond, Chao, Johannes and Kolyan.

I shared an office with RICHARD D. GILL for 26 months, more than half of my PhD. For a significant portion of that period, I had the entire office to myself because Richard was often away. While he was there, we argued over topics ranging from politics to Zen (I once accused him of unfaithful Zen practice). Notwithstanding that we disagree all the time, I gained plentiful wisdom from our conversations.

I would like to thank MARYSE LORANGER, whose sensible console and help in the spring of 2016 is gratefully acknowledged. Maryse also kindly provided the Dutch translation to the dissertation summary.

For the most part of my four-year time in Leiden, it was my routine to go to ballroom dancing lessons in the university sports center every Wednesday evening. I thank ANNEMARIJN RIJKERS and NUAN KESAREE for being my ballroom dancing partners in the years between 2014 and 2016. Dancing brought me a lot of pleasure and more importantly a social environment where my colleagues do not dominate. I spent quite some time on salsa dancing as well. I thank all the

Sometimes we agree.

Maryse's photographic dedication and skills impress me too.

girls who partnered with me in the Dancing parties. My pursuit of dancing shall continue after the PhD.

JULIEN POISAT

I bought a Giant Defy 1 road bike in the summer of 2014 and it soon became my most important recreational vehicle. Whenever it was sunny, I put on biking shorts and tights, got on my road bike and cycled. I became a map-that-walks for biking lanes of areas around Leiden. On the hottest day of 2014, I biked from Leiden to Arnhem with Julien, crossing the entire Netherlands in one day. On the last day of May 2015, Julien and I biked from Leiden to Essen of Belgium. I cycled to the beach of Katwijk, in the dunes of Wassenaar, by the tulip fields of Lisse and along the canals flowing from Leiden to Amsterdam. Maybe I will cycle all the way from Shanghai to Tibet.

Undoubtedly, I am indebted to my long-standing friend—HAOMIN WEN. It matters not where he is, whether in Philadelphia, Beijing, Bonn, South Bend or Shanghai, he has consistently been a source of support. We could talk on Skype for hours about international politics, or spend a whole evening on solving mathematical puzzles or programming tasks. The friendship is profound and shall progress further as both Haomin and I work in the same city.

Haomin works in  
a hedge fund in  
Shanghai.

I understand that it was not easy for my parents to send their only son to the other side of the Eurasian continent for such a long time, they have always wanted nothing but the best for my life. I shudder to think about the possibility that my children might be that far apart when they are grown up. I thank my parents for their support in me pursuing an academic career. I also thank my sister Fengxia and her husband Huidong for taking of our parents during my absence. My nephew, the son of my sister, Gaoyi, has brought upon the family fresh happiness and is the key figure in upholding the family dynamics at the moment. I wish him a wonderful life.

Surely I will have  
children at some  
point.

## CURRICULUM VITÆ

---

FENGNAN GAO (or by Chinese convention, GĀO FÈNG NÁN) was born in January 1988 in Jiangsu, China. After finishing high school at Nantong Middle School in 2005, he went on to study mathematics and statistics in Nanjing University, in the city bearing the same name as the university, and earned a Bachelor of Science there in 2009. He then left China for Master's study in applied mathematics in Kaiserslautern University of Technology and Eindhoven University of Technology, from both of which he obtained Masters of Science. His master's project in Eindhoven was completed in EURANDOM with the guidance of REMCO VAN DER HOFSTAD and RUI CASTRO. He spent the academic year 2011-2012 wandering all over China and contemplating what he wanted for life. Upon receiving a PhD position offered by AAD VAN DER VAART and funded by the Netherlands Organization for Scientific Research, he moved to Leiden at the end of August 2012. In the spring of 2016, he accepted an assistant professorship jointly appointed by the School of Data Science of Fudan University and Shanghai Center for Mathematical Sciences. He carries on research in the interdisciplinary frontiers of probability and statistics in the fair city of Shanghai.

高鳳楠



## COLOPHON

---

The dissertation is typeset using X<sub>Y</sub>LaTeX with different elements from LaTeX package *classthesis* and Michael Forbes' project of *Exploring Typography with LaTeX*. X<sub>Y</sub>TeX is a typesetting engine modified from TeX and TeX was designed and mostly written by Donald Knuth.

The author designed the layout in homage to Robert Bringhurst's seminal book *The Elements of Typographic Style*. For the purpose of preparing the dissertation, the author has since become quite informed on the internal macro programming of LaTeX.

The text typeface is Minion Pro by Adobe, an OpenType update of the original humanist Minion family designed by Robert Slimbach. The sans-serif typeface is Optima, a humanist sans-serif typeface by Hermann Zapf. The typeface for mathematical formulae is Minion Math, designed by Johannes Küster of typoma GmbH to accompany the Minion Pro family as its mathematical counterpart.

The Chinese typefaces are Fangzheng Jinling, which are modern remakes jointly by Founder and Kinichi Imada based on ancient Chinese printing press of the Ming Dynasty .

The dissertation is printed and handled by Print Service Ede.

Jinling is one of the former names of the city Nanjing, where the author earned his Bachelor's degree.