Chun Yu Hong (Johnny)

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EDUCATION

Ph.D. in Statistics August 2014 - May 2020
University of California, Berkeley Berkeley, CA
Dissertation: *Latent Variable Models: Maximum Likelihood Estimation and Microbiome Data Analysis*
Advisors: William Fithian (Department of Statistics), Perry de Valpine (Department of Environmental Science, Policy, and Management)

B.S. in Applied Mathematics (with Honors) September 2011 - June 2014
B.S. in Statistics (with Honors)
University of California, Davis Davis, CA

TEACHING EXPERIENCE

Lecturer August 2022 - Present
UC Berkeley Department of Statistics Berkeley, CA
- STAT 2 (Introduction to Statistics): Fall 2022

Graduate Student Instructor September 2014 - May 2020
UC Berkeley Department of Statistics Berkeley, CA
- Held weekly lab sections and office hours; addressed students' questions about the class materials; graded exams and suggested exam questions.
- Courses:
  - STAT 133 (Concepts in Computing with Data): Fall 2014
  - STAT 134 (Concepts of Probability): Spring 2017
  - STAT 135 (Concepts of Statistics): Summer 2015, Fall 2015
  - STAT 153 (Introduction to Time Series Analysis): Fall 2016, Spring 2018 (Course Instructor), Fall 2018, Fall 2019
  - STAT 154 (Modern Statistical Prediction and Machine Learning): Fall 2017
  - STAT 210A (Theoretical Statistics): Fall 2015 (Grader)
  - STAT 222 (Statistics MA Capstone Project): Spring 2016
  - STAT 248 (Analysis of Time Series): Spring 2020

Teaching Assistant Dec 2015 - Jan 2016
Tsinghua-Berkeley Shenzhen Institute (TBSI) Shenzhen, China
- Held lab sections and graded exams for a 3-week course on Introduction to Financial Engineering.

Mathematics Tutor November 2012 - August 2014
Student Academic Success Center Davis, CA
- Emphasized interactive learning by asking students questions instead of routinely presenting the solutions when solving problems.

INDUSTRY EXPERIENCE

Data Scientist June 2020 - Present
Google LLC Sunnyvale, CA
- Currently in Counter-Abuse Technology Data Science: Expand data science capabilities of Google's Trust and Safety operational intelligence data warehouse.

- Previously in E2E Data Science: Collaborated with software engineers and site reliability engineers to develop monitoring and alerting on key health metrics of Google Search indexing infrastructure.

Data Science Analytics Intern May 2019 - August 2019
Facebook Menlo Park, CA

- Analyzed the performance of video poll ads and provided key insights to cross-functional partners for product launch.
- Developed a novel framework for quantifying value of users to different types of advertising.
- Explored the value of brand advertising on Facebook and identified areas in which brand ads performed particularly well.

Research Scientist September 2018 - December 2018
PRO Unlimited @ Facebook Menlo Park, CA

- Evaluated the extent of treatment effect heterogeneity in Facebook experiments and raised awareness of the issue of multiple testing.

Data Scientist Intern May 2018 - August 2018
Quora Inc. Mountain View, CA

- Improved accuracy and precision in the A/B testing framework via advanced statistical methods.
- Conducted experiment analyses and metric investigations.
- Developed a data-driven approach for Quora digest email frequencies.

Data Science Intern June - August 2016; June - August 2017
Adobe Systems Incorporated San Jose, CA

- Developed models for customer churn forecasting using time series analysis and machine learning.
- Built an R package for finding the optimal combination of multiple forecasts.
- Created interactive visualization of model performance via R shinyApp.
- Conducted performance evaluation of the existing marketing lead scoring system.

CONSULTING EXPERIENCE

Statistical Consultant January 2016 - May 2016
UC Berkeley Department of Statistics Berkeley, CA

- Provided statistical guidance for researchers (primarily for UC Berkeley students) in various disciplines, such as psychology, biology, and economics.
- Discussed statistical issues such as experimental design and hypothesis testing procedures.

RESEARCH EXPERIENCE

Graduate Student Researcher Jan 2019 - May 2019
UC Berkeley Department of Statistics Berkeley, CA

- Examined the statistical properties of rarefaction, a widely used data normalization procedure for microbiome data analysis.

Undergraduate Researcher August 2013 - September 2013
UC Davis Department of Mathematics Davis, CA

- Developed software in SageMath for computation and experimentation with the 1-row Gomory-Johnson infinite group problem in discrete optimization.
- Advisor: Matthias Köppe.

REFEREED PUBLICATIONS

Hong, J., Karaoz, U., de Valpine, P., and Fithian, W. (2022) To rarefy or not to rarefy: robustness and efficiency trade-offs of rarefying microbiome data. *Bioinformatics*, 38 (9), 2389-2396.

Guo, X., **Hong, J.**, Lin, T., and Yang, N. (2021) Relaxed Wasserstein with Applications to GANs. *IEEE International Conference on Acoustics, Speech, and Signal Processing.*

Hong, C.Y., Köppe, M., and Zhou, Y. (2018) Equivariant perturbation in Gomory and Johnson's infinite group problem (V). Software for the continuous and discontinuous 1-row case. *Optimization Methods and Software*, 33 (3), 475-498.

WORKING PAPERS

Hong, J., Stoudt, S., and de Valpine, P. (2017+) Fast maximum likelihood estimation for general hierarchical models.

CONFERENCE PRESENTATIONS

International Statistical Ecology Conference (ISEC) July 2018
University of St Andrews St Andrews, Fife, Scotland

- Poster presentation of **Sampling-Based Approaches to Maximum Likelihood Estimation for Latent Variable Models**, joint work with Sara Stoudt and Perry de Valpine.

UNIVERSITY SERVICE

Climate Datathon Mentor April 2019
Berkeley-Haas AMENA Center Berkeley, CA

- Helped participating teams brainstorm data analysis ideas; addressed technical concerns from the participants.

DataFest Helper April 2017, April 2018
University of California, Berkeley Berkeley, CA

- Helped coordinate a data analysis competition for undergraduates; provided suggestions and feedback to participants.

COMPUTER SKILLS

Proficient (had used extensively at work before) in R, Python (including packages such as matplotlib, numpy, and pandas), SQL, Amazon Redshift, PySpark, Presto.
Experience (mainly from undergraduate coursework) in C, C++, and MATLAB.

HONORS AND AWARDS

Outstanding Graduate Student Instructor Award	UC Berkeley; 2016 - 2017
Dean's List	UC Davis; Fall 2011 - June 2014
Joseph Bonnheim Memorial Scholarship	UC Davis; Spring 2012, Spring 2013
Eric C. Ruliffson Scholarship in Mathematics	UC Davis; Spring 2012, Spring 2013
James and Leta Fulmor Scholarship	UC Davis; Spring 2012
Robert Lewis Wasser Memorial Scholarship	UC Davis; Spring 2012

EXAMS

Actuarial Exam P (Probability): Pass (Grade: 10) July 2013