

Dr. Shih-Ting Huang

Ph.D

✉ shighting@louisville.edu@

Education

September 2018 – @ **Rükr-University, Bochum, Germany**

August 2022 @ *Ph.D in Mathematics*

- Research assistant in the field of high-dimensional statistics with theory and application.@
- Advisor : Prof. Dr. Johannes Lederer.@
 - (<https://johanneslederer.com/>)@
- Dissertation: mathematical machine learning with applications to biological data.@
 - First reviewer: Prof. Dr. Johannes Lederer.@
 - * (<https://johanneslederer.com/>)@
 - Second reviewer: Prof. Dr. Holger Dette.@
 - * (<https://www.ruhr-uni-bochum.de/mathematik3/en/dette.html>)@

September 2013 – @ **Temple University, Philadelphia, United States**

May 2015 @ *Master of Science in Mathematics*

- Research assistant in the field of quantum computing.@
- Advisor : Prof. Dr. Wei-Shih Yang.@
 - (<https://math.temple.edu/~yang/>)@
- Thesis: quantum stable process.@

September 2010 – @ **National Taipei University, New Taipei City, Taiwan**

June 2013 @ *Bachelor of Business Administration in Statistics*

Work Experience

August 2024 – Now @ **University of Louisville, USA**

Tenure-Track Assistant Professor

- Department of Bioinformatics and Biostatistics.@

September 2022 – @ **Washington University in St. Louis, USA**

July 2024 @ *Postdoctoral Research Associate*

- Supervisor: Prof. Dr. Jiang (Joy) Shu.@
 - (<https://www.shujoyjiang.com/>)@

January 2018 – July @ **Yulon Motor, Taipei, Taiwan**

2018 @ *Data Scientist*

- Data mining, and statistical analysis of GPS and weather data.@
- Construction of the tire-wear prediction model for car preventive maintenance of customers.@

October 2016 – @ **King Abdullah University of Science and Technology, Thuwal, Saudi Arabia**

December 2017 @ *Visiting Scientist*

- Wavelet analysis of El Nino effect time series data.@
- Developing statistical models for evolving periodic time series data.@

October 2015 – @ **Ministry of National Defense, Taiwan**

September 2016 @ *Military Service*

Teaching Experience

- October 2018 – April 2019 @ **Rükr University, Bochum, Germany**
Teaching Assistant:
• Undergraduate level of probability theory.
- April 2019 – July 2019 @ **Rükr University, Bochum, Germany**
Course Instructor:
• R programming.
- October 2019 – April 2020 @ **Rükr University, Bochum, Germany**
Teaching Assistant:
• Graduate level of high-dimensional statistics.
- October 2020 – April 2021 @ **Rükr University, Bochum, Germany**
Teaching Assistant:
• Undergraduate level of probability and statistics.
- October 2021 – April 2022 @ **Rükr University, Bochum, Germany**
Teaching Assistant:
• Undergraduate level of probability and statistics.
- March 2024 – April 2024 @ **Washington University in St. Louis, USA**
Co-Instructor:
• Machine Learning for students from Department of Public Health.

Research Interests

- High-Dimensional Statistics, Precision Medicine, Personalized Prediction, Survival Analysis, Deep Learning, Predictive Modeling, Imaging Analysis, Robust Statistics, and Machine Learning.

References

- My Postdoctoral Supervisor:
Prof. Dr. Shu (Joy) Jiang
Associate Professor in Division of Public Health Sciences and and Director of the Epidemiology & Biostatistics Cancer Imaging Research Center , Washington University in St. Louis, USA.
Contact Information: jiang.shu@wustl.edu
[Personal Website](#)
- My Ph.D Supervisor:
Prof. Dr. Johannes Lederer
Professor of Mathematical Statistics , Ruhr-University Bochum, Germany.
Contact Information: johannes.lederer@rub.de
[Personal Website](#)
- My research paper collaborator:
Prof. Dr. Graham A. Colditz
Niess-Gain Professor and Chief, Division of Public Health Sciences in the Department of Surgery, Program Director of the Master of Population Health Sciences Degree Program, and Associate Director for Prevention & Control, Alvin J. Siteman Cancer Center, Washington University in St. Louis, USA.
Contact Information: colditzg@wustl.edu
[Personal Website](#)

Professional services

- Reviewer of Journal of Machine Learning Research (JMLR).@
- Reviewer of Annals of Applied Statistics (AOAS).@

Patent Pending

- Systems and Methods to Identify Pathologic Characteristics in Medical Images.@
 - Name of the creators: Prof. Dr. Graham A. Colditz, Prof. Dr. Jiang (Joy) Shu, and Dr. Shih-Ting Huang.@

Invited talks

- Joint Statistical Meetings, Toronto, Canada, Aug. 2023.@
 - Session: Topic-Contributed Paper Session.@
 - * Topic: Sample-specific learning of lymphovascular invasion with heterogeneous spatial patterns.@

Publications and Manuscripts

- 1.@ **Huang, S.-T.**, Colditz, G. & Jiang, S. Sample-specific cooperative learning integrating heterogeneous radiomics@ and pathomics data. *Under review by the Annals of Applied Statistics* (2023).@
- 2.@ **Huang, S.-T.**, Klose-Aydinyan, S.-C. & Lederer, J. Carathéodory's theorem on ℓ_q -convex-hull: $q \in (1, \infty)$.@ *Under review by Random Structures and Algorithms* (2023).@
- 3.@ **Huang, S.-T.** & Lederer, J. Optimization Landscapes of Wide Deep Neural Networks Are Benign. *Under revision by Journal of Machine Learning Research* (2023).@
- 4.@ **Huang, S.-T.** & Lederer, J. Targeted deep learning: Framework, methods, and applications. *Stat* **12**, e556@ (2023).@
- 5.@ **Huang, S.-T.**, West, R., Rivero-Gutiérrez, B., Jiang, S. & Colditz, G. Sample-specific learning of lymphovascular@ invasion with heterogeneous spatial patterns. *Under review by Journal of the Royal Statistical Society: Series C* (2023).@
- 6.@ **Huang, S.-T.** & Lederer, J. DeepMoM: Robust Deep Learning With Median-of-Means. *Journal of Computational and Graphical Statistics* **32**, 181–195 (2022).@
- 7.@ **Huang, S.-T.**, Düren, Y., Hellton, K. H. & Lederer, J. Tuning parameter calibration for personalized prediction@ in medicine. *Electronic Journal of Statistics* (2021).@
- 8.@ **Huang, S.-T.**, Xie, F. & Lederer, J. Tuning-free ridge estimators for high-dimensional generalized linear models.@ *Computational Statistics & Data Analysis* **159**, 107205 (2020).@

Papers in preparation

- **Huang Shih-Ting**, West Robert B., Rivero-Gutiérrez Belén, Colditz Graham A., and Jiang Shu.@ "Classifying@ lymphovascular invasions for breast cancer on histopathology slides."@
- **Huang Shih-Ting**, Colditz Graham A., and Jiang Shu. "Integrating pathomic and radiomic images to classify risk@ of subsequent events among women with ductal carcinoma in situ (DCIS)."@

Github Projects

- **Personalized Medicine:** https://github.com/LedererLab/personalized_medicine
- **T-ridge:** <https://github.com/LedererLab/tridge>
- **DeepMoM:** <https://github.com/LedererLab/DeepMoM>

Software skills

- Programming Languages: R, Python, MATLAB, SAS, SPSS, and Visual Basic.@
- Office Softwares: MS Excel and MS Word.@

Honors

- Dual Bachelor and Master Degree Program Scholarship from Temple University, Philadelphia, United States.@

Certificate

- April 2018@ **IBM Cognitive Class**
Data visualization with Python:
<https://courses.cognitiveclass.ai/certificates/441ad3d4ebfa4ae8b9c6521066c30153>
- April 2018@ **IBM Cognitive Class**
Python for Data Science:
<https://courses.cognitiveclass.ai/certificates/3b6a8ed251a34a6398065b6aec7ed6c7>
- March 2018@ **IBM Cognitive Class**
Data Analysis with Python:
<https://courses.cognitiveclass.ai/certificates/969b5f962c3e4c3ebfdf7d46a701ddd1>
- March 2018@ **IBM Cognitive Class**
Python 101:
<https://courses.cognitiveclass.ai/certificates/88830e6ec99941a9b05f34521390c811>
- November@ **Coursera**
2014@ *Developing Data Products (With Distinction):*
<https://www.coursera.org/account/accomplishments/verify/BS3DPKYMKG>
- November@ **Coursera**
2014@ *Practical Machine Learning (With Distinction):*
<https://www.coursera.org/account/accomplishments/verify/26ZYCY84KR>
- November@ **Coursera**
2014@ *Regression Models (With Distinction):*
<https://www.coursera.org/account/accomplishments/verify/S2GE77YF94>
- October@ **Coursera**
2014@ *Statistical Inference (With Distinction):*
<https://www.coursera.org/account/accomplishments/verify/ECR7FUEJ8F>
- October@ **Coursera**
2014@ *Reproducible Research (With Distinction):*
<https://www.coursera.org/account/accomplishments/verify/AAUGBFRPJ4>
- October@ **Coursera**
2014@ *Exploratory Data Analysis (With Distinction):*
<https://www.coursera.org/account/accomplishments/verify/UDR77ZJPAY>
- October@ **Coursera**
2014@ *Getting and Cleaning Data (With Distinction):*
<https://www.coursera.org/account/accomplishments/verify/ZUTMGAN22N>
- September@ **Coursera**
2014@ *R Programming (With Distinction):*
<https://www.coursera.org/account/accomplishments/verify/N6RTC9AU5>
- January@ **Society of Actuaries**
2013@ *SOA Exam Probability*