

# Pei-Shan Yen

My LinkedIn

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## PROFILE

Ph.D. candidate majoring in Biostatistics at the University of Illinois at Chicago. Strong interest in the field of neuroimaging studies and biomedical research. Publications: one book (Big Data), six journal papers (including two papers under review), five conference proceedings, two talks.

## EDUCATION

### University of Illinois at Chicago

Chicago, USA

*Ph.D. in Biostatistics* (GPA: 4.00)

2018 - Present

- *Research*: Casual Inference, Neuroimage Studies
- *Honor*: Paul Levy Memorial Student Scholarship (2021-2022)

### National Chengchi University

Taipei, Taiwan

*M.S. in Statistics* (GPA: 3.86)

2010

- *Research*: An International Study of 2010 Population Census Methods

## DOCTORAL RESEARCH

### Longitudinal High-Dimensional Mediation Models for Multimodal Neuroimage Data

Advisor: Dr. Dulal Bhaumik

- Quantified the longitudinal mediation effects of structural and functional activities on risk of the patients who suffered from mental disorders
- Addressed temporal and spatial correlations among brain connectivity and employed a prioritized multiple hypothesis testing procedure
- Collaborated with Dr. Olusola Ajilore's research team in Department of Psychiatry at University of Illinois at Chicago

## FULL-TIME PROFESSIONAL EXPERIENCES

### Taiwan Mobile, Taiwan

Apr 2014 - Apr 2016

*Senior Data Scientist, Acquisition and Loyalty Division*

- Conducted Big Data projects (*7,000,000 customer database*)
- Managed marketing projects and provided analytic idea to Information Technology team to locate target customers for preventing termination of contract
- Used Oracle by SQL syntax to identify customer characteristics for increasing loyalty
- Proposed incentive plans and managed all sales performance of customer call center
- Led new iPhone innovated research: used data mining skills to analyze long-term user behaviors and executed mystery shopper surveys to design practical new mobile plans

### NCKU Research and Development Foundation, Taiwan

Nov 2011 - Feb 2014

*Senior Data Analyst, Energy Research Center*

- Analyzed the solar heater user behaviors in Taiwan (*130,000 user database*)
- Monitored user behavior
- Evaluated lifetime of solar systems and proposed the adjustment of subsidy policy
- Conducted 30 field surveys in rural area, poultry & butchery industry, and tourism field

### United Advertising Group, Taiwan

Apr 2011 - Oct 2011

*Consultant, Uni-Survey Link Research*

- Specialized in both qualitative and quantitative research. For qualitative methods, hosted 16 focus group interviews, 5 mystery shopper surveys, and 6 central location tests
- Led consulting projects and provided brand strategies with long-term international partners

### 104 Group, Taiwan

May 2010 - Apr 2011

*Data Analyst, 104 Web Survey Center*

- Executed 12 online survey research projects (*2,000,000 customer database*)
- Composed reports and proposed new research plans
- Performed data mining to explore 104 database and developed specific job market regression models, including designed vocation training for Taiwan Ministry of Labor

GRADUATE  
RESEARCH  
ASSISTANTSHIP**University of Illinois at Chicago**

Nov 2018 - Present

*Graduate Research Assistant, Biostatistics Core, Center for Clinical and Translational Science*

- Performed consulting and biomedical data analysis (Coding: SAS Macro, R/R Shiny)

*Graduate Research Assistant, Department of Emergency Medicine*

- Performed consulting and data analysis for medical doctors (Coding: R)

**National Chengchi University, Taiwan**

Sep 2007 - Jan 2010

*Graduate Consultant, Science Service Research Center*

- Launch pioneering product “ORBI” in exhibition industry sponsored by IBM and HTC

*Graduate Business Analyst, Department of Management Information System*

- Innovated telephone interview system with advanced statistical function (owned copyright)

**Academia Sinica, Taiwan**

Nov 2007 – Dec 2008

*Graduate Assistant Consultant, Institute of Biomedical Sciences*

- Performed GeneSpring software to identify the characteristics of human genes

GRADUATE  
TEACHING  
ASSISTANTSHIP**University of Illinois at Chicago**

Aug 2018 - May 2019

- Biostatistics II, School of Public Health
- Analytic and Research Methods in Public Health, School of Public Health

**National Chengchi University, Taiwan**

Feb 2007 - Jun 2009

- Mathematical Statistics I/II, Department of Statistics
- Sampling Survey, Department of Statistics
- Statistical Software, Department of Statistics

GRADUATE  
COURSEWORK**Doctoral level**

- Generalized Linear Models, Multivariate Analysis, Advanced Statistical Inference, Large Sample Theory, Bayesian Methods, Missing Data, Computational Statistics

**Master level**

- Health Analytics, Longitudinal Data Analysis, Survival Analysis, Categorical Data Analysis, Experiment Design, Demography, Sampling Methods, Statistical Consulting

DOCTORAL COURSE  
PROJECTS**Developed R package entitled MixPoiRayExp: An Expectation–Maximization Algorithm for Finite Mixture Models***Course: Computational Statistics*

Aug 2020 – Dec 2020

**Using Machine Learning Classification Methods and SMOKE Resampling Skills to Predict Disease Risk***Course: Health Analytics*

Feb 2019 – Nov 2019

**Proportional Odds Models and Partial Proportional Odds Models for Ordinal Data Analysis***Course: Generalized Linear Model*

Apr 2019 - May 2019

**Two-Component Mix Model and Gamma Mixed Model for Estimating the Unknown True Concentration of Ground Water***Course: Independent Study*

Jan 2019 - Aug 2019

**Mixed-Effects Model for Detecting Disrupted Connectivities in Heterogeneous Data***Course: Linear Model*

Oct 2018 - Dec 2018

## PUBLICATIONS

**Book**

1. C.S. Yue and **P.S. Yen**. “Big data: The data wisdom and knowledge-based economics.” Tsang Hai Publishing, Taiwan, 2016.

**Journal Publications**

1. D.K. Bhaumik, Y.B. Song, **P.S. Yen**, and O.A. Ajilore. “Power Analysis for High Dimensional Neuroimaging Studies.” *Psychiatric Annals* (under review).
2. I. Imayama, A. Gupta, **P.S. Yen**, Y.F. Chen, B. Keenan, R. R. Townsend, J. A. Chirinos, F. M. Weaver, D. W. Carley, S. T. Kuna, and B. Prasad. “Racial Differences in Cardiovascular Response to Positive Airway Pressure Treatment.” *Journal of Clinical Sleep Medicine* (under review).
3. C.C. Li, A.K. Matthews, **P.S. Yen**, Y.F. Chen, and X.Q. Dong. “Intimate partner violence and Its Relationship with Psychological Distress Among Older Asian Americans: Results from the California Health Interview Survey.” *Asian Journal of Psychiatry*, 2021.
4. C.C. Li, A.K. Matthews, **P.S. Yen**, Y.F. Chen, and X.Q. Dong. “The Influence of Perceived Discrimination in Healthcare Settings on Psychological Distress Among a Diverse Sample of Older Asian Americans.” *Aging & Mental Health*, 2021.
5. C.W. Kuo, **P.S. Yen**, W.C. Chang and K.C. Chang. “The design and optical analysis of compound parabolic collector,” *Procedia Engineering*, 2014.
6. **P.S. Yen** and C.S. Yue. “An international study of 2010 population census methods.” *Journal of Population Studies*, 2010.

**Conference Proceedings**

1. J. Li, K. Qin, P.B. Doshi, X.D. Zhu, P. Kotini-Shah, M. Granado, H. Kim, **P.S. Yen**, R. Gordon, H.E. Wang, and T. Hoek. “Novel Blood Biomarker Taurine and Glutamate for Early Predicting Outcomes After Out-of-hospital Cardiac Arrest.” *AHA Resuscitation Science Symposium*, USA, 2020.
2. Y.F. Wang, K. Schachtschneider, Y.H. Huang, R. Gaba, P. Nguyen, **P.S. Yen**, M. Sverdlov, G. Guzman, and R. Lokken. “Infiltration of T-cell subpopulations in hepatocellular carcinoma is associated with tumor size, BCLC stage, and transplant-free survival.” *Society of Interventional Radiology Conference*, USA, 2020.
3. **P.S. Yen** and C.W. Kuo. “Policy for solar water heaters in Taiwan: An International Perspective,” *Grand Renewable Energy*. Grand Renewable Energy, Tokyo, Japan, 2014.
4. **P.S. Yen** and C.S. Yue. “An International Study of 2010 Population Census Methods.” *Taiwan Demography Association Annual Meeting*, Taipei, Taiwan, 2010.
5. **P.S. Yen** and C.S. Yue. “Feedbacks on Taiwan population registered system: A lesson from international experience using census techniques.” *Population Policy Symposium in Taipei City*, Taipei, Taiwan, 2010.

**Invited Talks**

1. **P.S. Yen** and S. Konda. “Clustering Depression Data.” *Department of Epidemiology and Biostatistics*, University of Illinois at Chicago, Nov 2019.
2. **P.S. Yen** and K.M. Chung. “Evaluation of solar water heater utilization status in Taiwan rural areas.” *2013 Energy Conservation & Carbon Reduction*, IC Broadcasting Company, Hsinchu, Taiwan, May, 2013.

**Other Reports**

1. **P.S. Yen**. “A Theoretical Study of Separation Data.” *Ph.D. Qualify Exam Report*, Department of Epidemiology and Biostatistics, University of Illinois at Chicago, Sep 2021.
2. **P.S. Yen**. “Analysis of Ranking Statistical Methods.” *Project Report*, Center for Clinical and Translational Science, University of Illinois at Chicago, Jun 2019.

VOLUNTEERING  
EXPERIENCES**American Beiyingu Alumnae Foundation**

May 2021 – Present

*President, Millennials Alumnae*

- Led a volunteering team of 45 people responsible for the alumnae activities
- Provided monthly workshops, lectures, career consulting services, social clubs, mentoring programs for 1500 alumnae
- Mentored the business analytic group and provided marketing strategies for alumnae activities

**American Red Cross – Wisconsin Region**

Oct 2016 - Feb 2018

*Data Analyst*

- Created statistical reports for the emergency response vehicle management

**Taipei Lifeline Association**

Jul 2013 – Aug 2014

*Data Analyst*

- Used 2011-2014 phone call records from national suicide prevention lifeline to perform data analysis for identifying suicide trend

**Asian Mental Health Association-Taipei**

Oct 2009 – Present

*Data Analyst*

- Provided data collection ideas for the Taiwan Ministry of Health and Red Cross Taiwan
- Executed crisis response training to the first responders, victims, and NGOs
- Assisted in 2009 Typhoon Moroak Project (the purpose of the project is to reduce the suicidal trend of victims during the 2010 Chinese New Year holiday)
- Developed models to compute suicide index for victims and demonstrated statistical applications to 82 NGO directors and the competent authorities