Yunran Chen

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EDUCATION

Duke University, Durham, North Carolina **08/2017–05/2019**
Master of Science in Statistics GPA: 3.9/4.0

Ben-Gurion University of Negev, Be'er Sheva, Israel **07/2017-08/2017**
Data Mining and Business Intelligence for Cyber Security GPA: 4.0/4.0

Renmin University of China, Beijing, China **09/2013–07/2017**
Bachelor of Science in Statistics GPA: 3.8/4.0
Dual degree: Bachelor of Economics 3.8/4.0

RESEARCH EXPERIENCE

Research Assistant (Advisor: Prof. Surya Tapas Tokdar) **05/2018-present**
Title: Testing Poisson versus Poisson mixtures with applications to neuroscience
- Proposed testing based on Bayes factor with marginal likelihood estimated by Predictive recursion marginal likelihood (PRML) algorithm
- Developed testing to identify four different kinds of Poisson mixtures by weaving Laplace approximation with Predictive recursion marginal likelihood gradient (PRMLG) algorithm
- Conducted extensive simulation showing great improvement compared to traditional testing procedure

Research Assistant (Advisor: Prof. Alexander Volfovsky) **05/2018-present**
Title: Dynamic latent space model on directed network
- Extended bilinear mixed-effects model to allow asymmetric multiplicative effect and each element evolving with time via Gaussian process
- Applied Gibbs sampling scheme with Polya-gamma augmentation
- Conducted extensive simulation showing good performance of the model for both estimation and prediction
- Modeled on International interaction data, showing good performance (AUC: 0.92) and interpretability

Independent Researcher (Advisor: Prof. Cunjie Lin) **07/2016–05/2017**
Thesis: Pairwise estimation of mixed spatial autoregressive model with sampled network data
- Applied pairwise maximum likelihood method to estimate regression coefficients in mixed spatial autoregressive model, reducing the computation for large-scale sparse matrices
- Employed snowball sampling to collect a real-life data set to serve as a practical application of the estimation

OTHER EXPERIENCE

Data Collection, Cleaning and Visualization
- Web-scraping, API requests, text data cleaning and spatial data visualization

Statistical Modeling
- Built a Bayesian Hierarchical Model to capture the differences and similarities among different companies to explore how Indeed can better serve its existing customers
- Applied epidemiological models to capture information diffusion process on Twitter network data
- Adopted a traditional Network Equilibrium Model and Queuing Theory to subsidize and optimize taxi resource configuration in the context of the Internet
- Extended evaluation criterion of Return on Investment in business into charitable activities by incorporating selected variables and simplified the grant allocation process into a linearly constrained optimization problem

Programming
- Built a shiny app to display movie information, support movies recommendation and people searching
- Wrote a Python package for variational inference on Latent Dirichlet Allocation

Neuroscience
- The Brain and Space by Duke University on Coursera

HONORS & AWARDS

- Presenter in AISC Conference at UNC Greensboro **2018**
- Honorable Mention for the 2017-18 BEST Award for Student Research **2018**
- First Prize for Excellent Graduation Thesis **2017**
- Honorable Mention in the Mathematical Contest in Modeling **2016**
- Second prize in the Chinese Undergraduate Mathematical Contest in Modeling **2015**
- Excellent Individual Work in the School of Statistics **2014, 2015**
- Second Prize for Academic Scholarship **2013, 2014**

TECHNICAL SKILLS & INTERESTS

Tools and Programing: R language, Python, Matlab, EXCEL VBA, C language, SPSS, Latex, Git