

YUNYI SHEN

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EDUCATION

PERIOD **November 2019 — May 2021**
 DEGREE **Master of Science in Statistics**
 INSTITUTE **University of Wisconsin-Madison** Madison, USA

PERIOD **August 2018 — May 2021**
 DEGREE **Master of Science in Wildlife Ecology**
 INSTITUTE **University of Wisconsin-Madison** Madison, USA

PERIOD **August 2014 — July 2018**
 DEGREE **Bachelor of Science in Integrated Science/Physical Biology**
 INSTITUTE **Peking University** Beijing, China

RESEARCH PROJECTS

PERIOD **May 2020 — May 2021**
 ADVISOR **Claudia Solís-Lemus** UW Madison
 TITLE **Bayesian Conditional Auto-regressive LASSO for sparse graphic learning with predictors**
 USDA 142 Formula Fund proposal. Develop a Bayesian conditional auto-regressive LASSO model and its extensions for high dimensional sparse regression and graphic selection. We also examined the experimental design issue with such model.

PERIOD **January 2019 — April 2020**
 ADVISOR **Tim Van Deelen, Brian Yandell** UW Madison
 TITLE **Spatially Explicit Modeling of Community Occupancy using Markov Random Field Models with Imperfect Observation: Mesocarnivores in Apostle Islands National Lakeshore**
 Develop a zero-inflated auto-logistic regression model for spatial explicit modeling of animal species distribution and interactions.

PERIOD **October 2018 — April 2020**
 ADVISOR **Tim Van Deelen, Dwayne Etter** UW Madison
 TITLE **Population Reconstruction of White Tailed Deer under Intensive Harvest**
 Develop a dynamic Bayesian network model for time series data in intensive management of white-tailed deer.

PERIOD **October 2016 — May 2018**
 ADVISOR **Sheng Li** Peking University
 TITLE **Distribution Mapping of Asiatic Black Bear**
 Distribution modeling of the black bear using data from multiple sources with various spatial resolutions with the Random Forest model. Develop a method for result fusion.

 PUBLICATIONS AND PREPRINTS

YEAR **2021**

Preprints

- [1] **Yunyi Shen** and Claudia Solís-Lemus "Bayesian Conditional Auto-regressive LASSO to learn sparse network with predictors" *arXiv (under review of Annals of Applied Statistics)*
- [2] **Yunyi Shen** and Claudia Solís-Lemus "The Effect of the Prior and the Experimental Design on the Inference of the Precision Matrix in Gaussian Chain Graph Models" *arXiv (submitted to Bayesian Analysis)*
- [3] **Yunyi Shen** and Claudia Solís-Lemus "CARlasso: An R package for the estimation of sparse microbial networks with predictors" *arXiv*

Peer-reviewed

- [1] **Yunyi Shen***, Erik Olsen and Timothy Van Deelen (2021) "Spatially Explicit Modeling of Community Occupancy using Markov Random Field Models with Imperfect Observation: Mesocarnivores in Apostle Islands National Lakeshore" *Ecological Modelling* 109712
- [2] **Yunyi Shen**, Mingzhang Liu, Dajun Wang, Xiaoli Shen and Sheng Li (2021) "Using an integrative mapping approach to identify the distribution range and conservation needs of a large threatened mammal, the Asiatic black bear, in China." (*Global Ecology and Conservation*, e01831)

YEAR **2019**

Peer-reviewed

- [1] Jianping Yu, **Yunyi Shen**, Xiaoyou Song, Xiaonan Chen, Sheng Li, and Xiaoli Shen "Evaluating the effectiveness of the functional zones for the protection of black muntjac (*Muntiacus crinifrons*) in Qianjiangyuan National Park" *Biodiversity*(in Chinese)

 CONFERENCE PRESENTATIONS AND POSTERS

YEAR **2020**

- [1] **Yunyi Shen**, Dwayne Etter, Tim Van Deelen, "Age structure effects and population control in urban/suburban white-tailed deer, Chicago, IL 1992-2006" *2020 Midwest Fish and Wildlife Conference*

YEAR **2019**

- [1] Dwayne Etter, John Humphreys, Tim Van Deelen, Gary Roloff, **Yunyi Shen** "Managing White-tailed Deer Under a Newly Evolving Paradigm: A Demonstration of the Effects of Density-Dependence" *2019 annual TWS conference*

YEAR **2017**

- [1] **Yunyi Shen**, Dajun Wang, Sheng Li "Identify critical knowledge gap and conservation needs of Asiatic Black Bear through high-resolution mapping" *Chinese Chapter of SCB Annual Conference 2017* Best graduate student presentation award

YEAR **2016**

- [1] Jinlin Chen, Xi'er Chen, Haowen Liu, **Yunyi Shen**, Yichao Zeng, Lijie Yin "Biodiversity survey in Chongzuo examined effects of the white-headed langur (*Trachypithecus leucocephalus*) as a flagship species on habitat conservation" *Conservation of China's Tropical Diversity (Poster)*

 SOFTWARE PACKAGES

TITLE **CARlasso**

DESCRIPTION Conditional Autoregressive LASSO with its extensions, available on CRAN.

TITLE **robustcov**

DESCRIPTION Collection of robust (sparse) precision matrix estimators, available on CRAN.

TITLE **IsingOccu**

DESCRIPTION Gibbs sampler for a zero-inflated auto-logistic model with an auto-logistic zero-inflation process, available on GitHub.

 JOURNAL REFEREE

ECOSPHERE

 PROFESSIONAL POSITIONS

PERIOD **January 2019 — December 2019**

EMPLOYER **Qianjiangyuan National Park**

Zhejiang China

TITLE **Statistical Consultant**

Black muntjac population and distribution modeling

PERIOD **June 2017 — July 2018**

EMPLOYER **Peking University Biology Museum**

Beijing China

TITLE **Docent**

Science communication manuscript writing, automatic guiding system construction, guide visitors

 OUTREACH

YEAR	2021	
ACTIVITY	PBS Meet the Lab	Madison, WI
POSITION	the "Data Scientist"	
	Communicate and guide K-12 student learn about research and data science	
YEAR	2016	
EMPLOYER	<i>Bo Wu</i> (Chinese National Geography Magazine)	Beijing China
POSITION	Editor	
	Edit science communication manuscripts	

 AWARDS AND SCHOLARSHIPS

YEAR	2020	
AWARD	Finalist of Janice Lee Fenske Memorial Award of TWS	IL U.S.A.
YEAR	2019	
AWARD	Conservation Leader for Tomorrow Scholarship	IL U.S.A.
YEAR	2017	
AWARD	Peking University Annual Award in Social Works	Beijing, China
YEAR	2013	
AWARD	Silver Medal in Chinese Chemistry Olympiad	Beijing, China

 TEACHING

SEMESTER	Fall 2019	
INSTITUTE	UW Madison	
COURSE	General Chemistry (CHEM 103)	TA
SEMESTER	Spring 2019	
INSTITUTE	UW Madison	
COURSE	General Chemistry (CHEM 104)	TA
SEMESTER	Spring 2018	
INSTITUTE	Peking University	
COURSE	English as Second Language for Non-Academic Staffs	Instructor
SEMESTER	Fall 2017 & Fall 2016	
INSTITUTE	Peking University	
COURSE	Evolution of Human Intelligence	TA
SEMESTER	Spring 2016	
INSTITUTE	Peking University	
COURSE	Undergraduate Seminar in Genetics	TA
SEMESTER	Summer 2015 & Summer 2014	
INSTITUTE	Xi'an No.1 (2015)/Tieyi (2014) High School	
COURSE	Chinese Chemistry Olympiad (CChO)	Instructor