

# YUNYI SHEN

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## EDUCATION

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PERIOD	<b>November 2019 — May 2021</b>	
DEGREE	<b>Master of Science in Statistics</b>	
INSTITUTE	<b>University of Wisconsin-Madison</b>	Madison, USA
PERIOD	<b>August 2018 — May 2021</b>	
DEGREE	<b>Master of Science in Wildlife Ecology</b>	
INSTITUTE	<b>University of Wisconsin-Madison</b>	Madison, USA
PERIOD	<b>August 2014 — July 2018</b>	
DEGREE	<b>Bachelor of Science in Integrated Science/Physical Biology</b>	
INSTITUTE	<b>Peking University</b>	Beijing, China

## RESEARCH PROJECTS

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PERIOD	<b>May 2020 — May 2021</b>	
ADVISOR	<b>Claudia Solís-Lemus</b>	UW Madison
TITLE	<b>Bayesian Conditional Auto-regressive LASSO for sparse graphic learning with predictors</b> 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	<b>January 2019 — April 2020</b>	
ADVISOR	<b>Tim Van Deelen, Brian Yandell</b>	UW Madison
TITLE	<b>Spatially Explicit Modeling of Community Occupancy using Markov Random Field Models with Imperfect Observation: Mesocarnivores in Apostle Islands National Lakeshore</b> 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**

- [1] **Yunyi Shen** and Claudia Solís-Lemus "Bayesian Conditional Auto-regressive LASSO for sparse graphic learning 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)*
- [3] **Yunyi Shen\***, Erik Olsen and Timothy Van Deelen "Spatially Explicit Modeling of Community Occupancy using Markov Random Field Models with Imperfect Observation: Mesocarnivores in Apostle Islands National Lakeshore" *Ecological Modelling* (Accepted)
- [4] **Yunyi Shen** and Claudia Solís-Lemus "CARlasso: An R package for the estimation of sparse microbial networks with predictors" *arXiv (submitted)*
- [5] **Yunyi Shen**, Mingzhang Liu, Dajun Wang, Xiaoli Shen and Sheng Li "Identify distribution range and conservation needs of a large threatened mammal through an integrative mapping approach: the case of Asiatic black bear, China" *(under review of Global Ecology and Conservation)*

YEAR **2019**

- [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)

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 CONFERENCE PRESENTATIONS AND POSTERS
 

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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)*

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 SOFTWARE PACKAGES
 

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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.

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 JOURNAL REFEREE
 

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ECOSPHERE

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 PROFESSIONAL POSITIONS
 

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

## AWARDS AND SCHOLARSHIPS

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

## TEACHING

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