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EMPLOYMENT

2023.07-	Associate Professor - Department of Agricultural and Biosystems Engineering, North Dakota State University, Fargo, ND, U.S.
2018-2023	Assistant Professor - Department of Agricultural and Biosystems Engineering, North Dakota State University, Fargo, ND, U.S.
2015-2018	Research Scientist - Department of Animal Sciences, North Dakota State University, Fargo, ND, U.S.
2013-2015	Lecturer (50% Teaching; 50% Research) - Department of Engineering, Nanjing Agricultural University, Nanjing, Jiangsu, China.

EDUCATION

2003-2007	B.S. Electronic Information Science and Technology, Yantai University, China
2007-2013	Ph.D. Agriculture Engineering, Nanjing Agricultural University, China

TEACHING

- PAG 115 Introduction to Precision Agriculture 2019F, 2020F, 2021F, 2022F
- PAG 115L Introduction to Precision Agriculture (Lab) 2020F, 2021F, 2022F
- PAG 215 Mapping of Precision Ag Data 2019Sp, 2020Sp, 202Sp, 2022Sp, 2023Sp
- PAG 315 Electronic Systems in Precision Agriculture 2020F, 2021F, 2022F
- PAG 496 Field Experience/Practicum 2019F, 2020F, 2021F, 2022F
- PAG 496 Field Experience (Ag Tech Expo) 2019Sp, 2020Sp

PUBLICATIONS (* indicate the corresponding author) (Selected)

Journal Article	Abstract	Book Chapter	Conference Proceeding	Technical Papers	Industry Report	Professional Engineer Publication (ASABE Resource)	Press Features	Total
42	**48**	**2**	**6**	**2**	**1**	**1**	**26**	**128**

1. Delavarpour, N., Koparan, C., Zhang, Y., Steele, D. D., Betitame, K., Bajwa, S. G., **& Sun, X***. (2023). A Review of the Current Unmanned Aerial Vehicle Sprayer Applications in Precision Agriculture. *Journal of the ASABE*. Accepted (in press). doi: https://10.13031/ja.15128.
2. Ahmed, M. R., Koparan, C., Ram, B., Howatt, K., Zhang, Y., & **Sun, X***. (2022). Multiclass Classification on Soybean and Weed Species Using a Customized Greenhouse Robotic and Hyperspectral Combination System. *Journal of the ASABE*, 65(5): 1071-1080. doi: https://doi.org/10.13031/ja.15131.
3. GC, S., Zhang, Y., Koparan, C., Ahmed, M. R., Howatt, K., & **Sun, X***. (2022). Weed and crop species classification using computer vision and deep learning technologies in greenhouse conditions. *Journal of Agriculture and Food Research*, 9, 100325. doi: https://doi.org/10.1016/j.jafr.2022.100325.
4. Costa, C., Zhang, Y., Howatt, K., Ram, B., Stenger, J., Nowatzki, J., Bajwa, S. G., & **Sun, X***. (2022). Palmer amaranth (amaranthus palmeri s. Watson) and soybean (glycine max l.) classification in greenhouse using hyperspectral imaging and chemometrics methods. *Journal of the ASABE (former Transactions of the ASABE)*, 65(1): 179-188. doi: https://doi.org/10.13031/ja.14321.
5. Eide, A., Zhang, Y., Koparan, C., Stenger, J., Ostlie, M., Howatt, K., Bajwa, S., & **Sun, X***. (2021). Image based thermal sensing for glyphosate resistant weed identification in greenhouse conditions. *Computers and Electronics in Agriculture*, 188, p.106348. doi: https://doi.org/10.1016/j.compag.2021.106348.
6. Chen, X., Ogdahl, W., Hanna, L.L.H., Dahlen, C.R., Riley, D.G., Wagner, S.A., Berg, E.P., & **Sun, X***. (2021). Evaluation of beef cattle temperament by eye temperature using infrared thermography technology. *Computers and Electronics in Agriculture*, 188, p.106321. doi: https://doi.org/10.1016/j.compag.2021.106321.
7. Eide, A., Koparan, C., Zhang, Y, Ostlie, M., Howatt, K., **Sun, X***. (2021). UAV-Assisted Thermal Infrared and Multispectral Imaging of Weed Canopies for Glyphosate Resistance Detection. Remote Sensing, 13(22): 4606. doi: https://doi.org/10.3390/rs13224606

8. Shi, Y., Wang, X., Mohammad, B., Young, J., Newman, D., Berg, E., & **Sun, X*.** (2021). Review article - A review on meat quality evaluation methods based on non-destructive computer vision and artificial intelligence technologies. *Food Science of Animal Resources*. doi: https://doi.org/10.5851/kosfa.2021.e25.
9. GC, S., Saidul Md, B., Zhang, Y., Reed, D., Ahsan, M., Berg, E. P., & **Sun, X*.** (2021). Using Deep Learning Neural Network in Artificial Intelligence Technology to Classify Beef Cuts. *Frontiers in Sensors*, 2, 5. doi: https://doi.org/10.3389/fsens.2021.654357.
10. Ahmed, M. R., Reed, D. D. Jr., Young, J. M., Eshkabilov, S., Berg, E. P., & **Sun, X*.** (2021). Beef Quality Grade Classification Based on Intramuscular Fat Content Using Hyperspectral Imaging Technology. *Applied Sciences*. 11(10):4588. doi: https://doi.org/10.3390/app11104588. **(Cover Story)**
11. Chen, X., Ogdahl, W., Borhan, M. S., & **Sun, X*.** (2020). Evaluation of Beef Cattle Temperament Using Video Technology. *Transactions of the ASABE*, 63(6), 1905-1911. doi: https://doi.org/10.13031/trans.14044.

RESEARCH GRANT (Selected)

	Total	Sun's Share
By Jan 31st, 2023	**$ 11.8M**	**$2.6M**

1. **Xin Sun (PI)**. Distinguishing herbicide resistant (Glufosinate, Glyphosate, PPO inhibitors and Dicamba) kochia in sugar beet field using deep learning algorithm and hyperspectral technology. $11,673 from the State Board of Agricultural Research. 06/2022-06/2023
2. **Xin Sun (CPI)**, Minwei, Xu (PI). A novel soybean sorting technology for producing high-quality tofu products. $38,299 from the ND Department of Agriculture. 06/2021-12/2022.
3. **Xin Sun (Senior Personnel)**, Om Prakash Yadav (PI). REU Site: research experience for undergraduates in big data analytics and machine learning. $514,253 from NSF.
4. **Xin Sun (CPI)**, David Bullock (PI). Improving the economic and ecological sustainability of us crop production through on-farm precision experimentation. $4M from USDA-NRCS. 06/2021-06/2024.
5. **Xin Sun (PI)**. Assessment of consumer purchasing and education of beef quality attributes using mobile applications (Android and iPhone operating system: IOS) - Year 2. $15,823 from the State Board of Agricultural Research. 06/2021-06/2022
6. **Xin Sun (Key Personnel)**, Bakhtiyor Rasulev (PI). Acquisition of a High-Performance Computing System for Scientific Research and Education at NDSU. $1.26M from NSF. 10/2020-09/2023.
7. **Xin Sun (CPI)**, Benjamin Braaten (PI). Development of an RF sensing platform for grain detection - phase 3. $138,714. 06/2020-06/2021.
8. **Xin Sun (PI).** Computer vision system development for online pork loin quality evaluation. $70,000 from the National Pork Board. 06/2019-06/2023
9. **Xin Sun (CPI)**, Greg Lardy (PI). Advanced UAS/UAV application systems, data management systems, and bioinformatics tools that integrate GxExM data into precision agricultural crop management for regional relevant crops. $4.6M from the USDA-ARS. 10/2018-10/2023.
10. **Xin Sun (CPI)**, Benjamin Braaten (PI). Development of an RF sensing platform for grain detection - phase 2. $66,817. 06/2019-06/2020.

PROFESSIONAL SERVICE (Selected)

1. NSF 2021, 2022, 2023 **Grant Reviewer/Panelist**
2. USDA-NIFA 2021,2023 **Grant Reviewer/Panelist**
3. Alberta Innovates - Smart Agriculture and Food Digitalization and Automation Challenge (SAFDAC) 2021 **Grant Reviewer**
4. Canada Agriculture Funding Consortium 2021-2022 **Grant Reviewer**
5. ASABE – **Associate Editor**

SUPERVISING

Postdoc/Visiting Scholar/Research Specialist	Graduate Student	Undergraduate Student (Major Advisor)	Undergraduate Student (Research Advisor)	Capstone (Senior Design)	Total
11	**27**	**19**	**18**	**42**	**117**

PATENT

1. RFT 634 - A multifunctional robotic vehicle system in precision agriculture. Filed.
2. Lamp box used for detecting quality of agricultural products on line. Patent CN-204227212-U