Xiao Yang

Ph.D Candidate, Department of Poultry Science

University of Georgia, Athens, GA, USA

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CURRENT POSITION

Graduate Research Assistant, University of Georgia, Athens, GA, USA

EDUCATION

- **Sep 2021-Present University of Georgia, Athens, GA, USA**
  GPA: 3.90/4.0, **PhD Candidate of Poultry Science**

- **Sep 2018-Jun2020 China Agricultural University   Beijing, China**
  GPA: 3.22/4.0, **Master of Science in Animal Science** Granted in June 2020

- **Sep 2014-Jun 2018 South China Agricultural University Guangzhou China**
  GPA: 3.62/5.0, **Bachelor of Science in Animal Science** Granted in June 2018

RESEARCH INTERESTS / SUMMARY

- Focused on precision farming, interested in developing models helping manage chicken farm and improve poultry welfare based on computer vision;

- Additional interest includes optimizing feed formula for feed mills and dealing with practical problems such as feed waste and waste disposal in farms;

- Conducted several field trips and internships in farms and feed mills, has been practicing solving front-line difficulties with professional knowledge.

RESEARCH TECHNIQUES AND SKILLS

- Computer Vision: Python, deep learning, object recognition, classification, and segmentation by neural network

- Real-time PCR: Detection of microorganisms in rumen fluid and feces

- Gas Chromatograph: Determination of rumen fluid volatile fatty acids

- Proximate Analysis: Including moisture, ash, crude protein, ether extract, neutral detergent fiber, acid detergent fiber and so on

- Other skills: Using thermal camera and SLR camera, collecting rumen fluid by a flexible esophageal tube; Design feed formula

RESEARCH AND INTERNSHIP EXPERIENCES

Sep 2021-Present, *Research Assistant*

University of Georgia   **Athens**

- Rear 800 cage-free chickens at Poultry Research Center and installed video systems, light control systems to collect image data

- Measuring chicken body weight based on thermal camera and deep learning for less labor of weighting birds

- Detecting cage-free chicken and calculating total number of recognized chickens to improve real-time detection of chicken using deep learning

- Classifying behaviors of chicken automatically via convolutional neural network and utilizing these behavioral indicators to improve chicken welfare

- Monitoring wild birds by computer vision to prevent high pathogenic avian influenza (HPAI)

- Breeding Athens Canadian Random Bred (ACRB)

- Helping extension (International Poultry Short Course, 4-H) at department of poultry science

Sep 2020-May 2021, *Lab assistant*

Sinovac Life Science Co., Ltd.   **Beijing**

- Worked as a lab assistant to evaluate the effectiveness of the vaccines

Mar 2019-Jun 2019, *Assistant Experimenter Intern*

Hong' An High-Quality Beef Cattle Technology Breeding Co., Ltd.   **Yangxin**

- Part of the graduation experiment for my master's degree, researched with doctoral students

- Targeted to solve the problem of high tannin content in sorghum as the feed for cattle

- Conducted Latin Square Experiment on Simmental bull, utilized the theoretical basis that polyethylene glycol can eliminate the toxic and side effects of tannin, increased the use of tannin-rich feed for beef cattle, which allowed sorghum to become a roughage resource that could feed grass-eating livestock like cattle, sheep, and camels in large quantities

- Reduced nitrogen emissions in animal feces with a certain proportion of polyethylene glycol and tannin in their feed

Jun2018-Aug 2018, *Member, Elite Cattlemen Summer Program*

DeLaval Beijing and College of Animal Science and Technology, China Agricultural University   **Beijing**

- Joined as a member of the Elite Cattlemen Summer Program, merit-based, highly selective

- Acquired theoretical lessons and production training at DeLaval, Beijing, in English; studied comprehensive and systemic solutions including traditional and fully automatic milking systems, milk quality and animal health maintaining, milk refrigeration, cow comfort, ranch supplies, feeding, manure treatment, barn facilities, and ranch management support systems, covering all aspects of ranch operations

- Applied the knowledge to help dairy farmers to take care of cows and produce dairy products

Sep 2017-Mar 2018, *Academic Research*

Undergraduate Thesis, *The Distribution of Glucose Transporters at the Placenta of Sow*, South China Agricultural University, Guided by Associate Professor Fang Chen Guangzhou

- Extracted RNA from different parts of the pig placenta, conducted real-time PCR, and explored the distributionsof the glucose transporter
- Provided a theoretical basis for the use of glucose in pregnant sows, discussed the distribution of glucose carriers in the pig placenta preliminarily, prepared basic data for future research on the function of glucose transporters

Jul2017-Aug 2017, *Assistant ExperimenterIntern*

Changjiang Food Group Co., Ltd. **Foshan**

- Performed piglet fattening experiments and learned to design experiments on production issues
- Fed 300 piglets for one month, grouped them based on their initial weight, compared four feed produced by different companies by analyzing feed intake

Aug 2016, *Field Study, Farm Breeding Intern*

Guangdong Wen's Foodstuffs Group Co.,Ltd. **Zhaoqing**

- Learned breeding techniques, and experienced the whole process from breeding the pigs to selling the pigs
- StudiedWen's unique family cooperation model, provided farmers the unified piglets, vaccines, feed, and other technical instructions, helped them sow more piglets, reduce feed costs, and improve maturity rate

Jun2015-Jun 2017, *Pet Breeding Intern, Team Leader*

College of Animal Science, South China Agricultural University **Guangzhou**

- Undergraduate Innovation and Entrepreneurship Program for the breeding of mammals and ornamental birds
- Visited the pet laboratory three times a week, successfully bred two litters of Chinchillas, a litter of Russian blue cats, and a litter of Garfield cats, witnessed the yellow Opaline, pink Bourke's Parrot, and other Ploceidae breeding offspring in the lab
- Exhibited on pet culture festival, presented achievements to primary schools students nearby

Aug2014, *Feeding Intern*

ZhongshanJianbang Feed Technology Co., Ltd **Zhongshan**

- Understood the process of feed production, assisted workers to produce the feed, involved in the production and packaging of premixed feed, an average of 300 bags, each 20kg, were produced each day

PROJECTS

[1] 2023-2024: Post Vaccination Performance Model Development with Zoetis (the world's largest producer of medicine and vaccinations for pets and livestock). $100,000 (leader).

[2] 2023-2026: Precision farming practices for sustainable egg production. USDA-NIFA. $300,000 (participant).

PUBLICATIONS (27 peer-reviewed papers, 1 M.S. thesis, 29 conferences papers and 9 first author international conference presentations)

Peer Reviewed Journal Articles:

[1] **Yang, X**.; Bist, R.; Subedi, S.; Chai, L. A Deep Learning Method for Monitoring Spatial Distribution of Cage-Free Hens. *Artificial Intelligence in Agriculture* **2023**, *8*, 20–29, doi:10.1016/j.aiia.2023.03.003.

[2] **Yang, X**.; Chai, L.; Bist, R.B.; Subedi, S.; Wu, Z. A Deep Learning Model for Detecting Cage-Free Hens on the Litter Floor. *Animals* **2022**, *12*, 1983, doi:10.3390/ani12151983.

[3] **Yang, X**., R. Bist, S. Subedi, Z. Wu, T. Liu, L. Chai. (2023). An automatic classifier for monitoring applied behaviors of cage–free laying hens with deep learning. *Engineering Applications of Artificial Intelligence.*

[4] **Yang, X**., R. Bist, S. Subedi, L. Chai. (2023).A Computer-Vision-Based Automatic System for Egg Grading and Defect Detection. *Animals*.

[5] **Yang X**, Bist RB, Paneru B, Chai L. Deep Learning Methods for Tracking the Locomotion of Individual Chickens. Animals. 2024; 14(6):911. https://doi.org/10.3390/ani14060911

[6] **Yang, X**., Dai, H., Wu, Z., Bist, R. B., Subedi, S., Sun, J., ... & Chai, L. (2024). An innovative segment anything model for precision poultry monitoring. Computers and Electronics in Agriculture, 222, 109045.

[7] **Yang, X**, Ramesh Bahadur Bist, Bidur Paneru, Tianming Liu, Todd Applegate, Casey Ritz, Woo Kim, Prafulla Regmi1, Lilong Chai. Revolutionizing Poultry Management with Advancements in Computer Vision. *Computers and Electronics in Agriculture*.

[8] **Yang, X**, Ramesh Bist, Bidur Paneru, Lilong Chai, Deep learning methods for tracking individual chickens for locomotion analysis. *Poultry Science*.

[9] **Yang, X**, Ramesh Bist, Sachin Subedi, Zihao Wu, Tianming Liu, Bidur Paneru, Lilong Chai. A deep learning framework for monitoring wild birds on poultry farms to prevent avian influenza. (Submitted)

[10] **Yang X**, Jinchang Zhang, Bidur Paneru, Jiakai Lin, Ramesh Bist, Guoyu Lu, Lilong Chai, Monitoring Dead Chickens and Floor Eggs with Robotic Technologies. (Submitted)

[11] Subedi, S.; Bist, R.; **Yang, X**.; Chai, L. Tracking Pecking Behaviors and Damages of Cage-Free Laying Hens with Machine Vision Technologies. Computers and Electronics in Agriculture 2023, 204, 107545, doi:10.1016/j.compag.2022.107545.

[12] Bist, R.B.; Subedi, S.; Chai, L.; **Yang, X**. Ammonia Emissions, Impacts, and Mitigation Strategies for Poultry Production: A Critical Review. Journal of Environmental Management 2023, 328, 116919, doi:10.1016/j.jenvman.2022.116919.

[13] Bist, R.B., **Yang, X**, Subedi, S, L. Chai. Mislaying behavior detection with deep learning technologies. *Poultry Science*, 102729.

[14] Bist, R.B., **Yang, X**., Subedi, S., Sharma, M.K., Singh, A.K., Ritz, C.W., Kim, W.K. and Chai, L., 2023. Temporal Variations of Air Quality in Cage-Free Experimental Pullet Houses. *Poultry*, *2*(2), pp.320-333.

[15] Subedi S, Bist R, **Yang X**, Chai L. Tracking floor eggs with machine vision in cage-free hen houses. Poultry science.;102(6):102637.

[16] Bist, R.B., **Yang, X**., Subedi, S. and Chai, L., 2024. Automatic detection of bumblefoot in cage-free hens using computer vision technologies. Poultry Science, p.103780.

[17] Bist RB, Subedi S, Chai L, Regmi P, Ritz CW, Kim WK, **Yang X**. Effects of Perching on Poultry Welfare and Production: A Review. Poultry 2023, 2, 134–157.

[18] Bist RB, Subedi S, **Yang X**, Chai L. Effective Strategies for Mitigating Feather Pecking and Cannibalism in Cage-Free W-36 Pullets. Poultry. 2023 May 8;2(2):281-91.

[19] Bist RB, Subedi S, **Yang X**, Chai L. A Novel YOLOv6 Object Detector for Monitoring Piling Behavior of Cage-Free Laying Hens. AgriEngineering. 2023 May 12;5(2):905-23.

[20] Xie B, **Yang X**, Yang L, Wen X, Zhao G. Adding polyethylene glycol to steer ration containing sorghum tannins increases crude protein digestibility and shifts nitrogen excretion from feces to urine. Animal Nutrition. 2021 Sep 1;7(3):779-86.

[21] Bist, R.B., Subedi, S., **Yang, X**. and Chai, L., 2023. Automatic Detection of Cage-Free Dead Hens with Deep Learning Methods. *AgriEngineering*, *5*(2), pp.1020-1038.

[22] Bist, R.B., **Yang, X.**, Subedi, S., Ritz, C.W., Kim, W.K. and Chai, L., 2024. Electrostatic particle ionization for suppressing air pollutants in cage-free layer facilities. Poultry Science, 103(4), p.103494.

[23] Bist, R. B., **Yang, X.**, Subedi, S., Paneru, B., & Chai, L. (2024). Enhancing Dust Control for Cage-Free Hens with Electrostatic Particle Charging Systems at Varying Installation Heights and Operation Durations. AgriEngineering, 6(2), 1747-1759.

[24] Guo, Yangyang, Samuel E. Aggrey, **Xiao Yang**, Adelumola Oladeinde, Yongliang Qiao, and Lilong Chai. "Detecting broiler chickens on litter floor with the YOLOv5-CBAM deep learning model." *Artificial Intelligence in Agriculture* (2023).

[25] Bist, Ramesh Bahadur, **Xiao Yang**, Sachin Subedi, and Lilong Chai. "Illuminating Solutions for Reducing Mislaid Eggs of Cage-Free Layers." AgriEngineering 5, no. 4 (2023): 2170-2183.

[26] Lu, H., Xue, M., Nie, X., Luo, H., Tan, Z., **Yang, X.**, Shi, H., Li, X. and Wang, T., 2023. Glycoside hydrolases in the biodegradation of lignocellulosic biomass. 3 Biotech, 13(12), p.402.

[27] Bist, R. B., **Yang, X.**, Subedi, S., Paneru, B., & Chai, L. (2024). An Integrated Engineering Method for Improving Air Quality of Cage-Free Hen Housing. AgriEngineering, 6(3), 2795-2810.

[28] Xie, B., Yang, **X., Yang**, L., Wen, X., & Zhao, G. (2021). Adding polyethylene glycol to steer ration containing sorghum tannins increases crude protein digestibility and shifts nitrogen excretion from feces to urine. Animal Nutrition, 7(3), 779-786.

[29] Li, W., Zhang, X., Li, J., **Yang, X.**, Li, D., & Liu, Y. (2024). An explanatory study of factors influencing engagement in AI education at the K-12 Level: an extension of the classic TAM model. Scientific Reports, 14(1), 13922.

M.S. THESIS

[30] **Yang, X**. 2020. Effects of adding different levels of polyethylene glycol to sorghum diets on rumen fermentation, rumen microflora, nutrient digestibility and plasma biochemical indicators of beef cattle.

Conference papers/abstract:

[1] **Yang, X**, L. Chai, R. Bist, S. Subedi, and Z. Wu. Monitoring cage-free laying hens with deep learning models. 2023 US Livestock Farming Conference. Knoxville, TN, May 21-24 Full Paper accepted.

[2] Bist, R. B, **X. Yang**, and S. Subedi, L. Chai. Monitoring floor egg laying behaviors of cage-free hens with machine vision. 2023 US Livestock Farming Conference. Knoxville, TN, May 21-24. Full Paper accepted.

[3] Subedi, S., L. Chai, R. Bist, **X. Yang**. Floor Egg Detection with Machine Vision in Cage-free Hen Houses. 2023 US Livestock Farming Conference. Knoxville, TN, May 21-24. Full Paper accepted.

[4] **Yang, X.**, Bist, R., Subedi, S., L. Chai. Tracking cage-free laying hens on litter floor with machine vision. 2023 International Poultry Scientific Forum (IPSF), Jan. 22-23, Atlanta, GA.

[5] Bist, R., Yang, X., Subedi, S., L. Chai*. Monitoring mislaying behaviors of cage-free hens with deep learning. 2023 International Poultry Scientific Forum (IPSF), Jan. 22-23, Atlanta, GA.

[6] Subedi, S., **Yang, X.**, Bist, R., L. Chai. Detecting Floor Eggs with Machine Vision

Technologies. 2023 International Poultry Scientific Forum (IPSF), Jan. 22-23, Atlanta, GA.

[7] **Yang, X.**, L. Chai, R. Bist, and S. Subedi. 2022. Litter quality in cage-free houses. 2022 ASABE Annual International Meeting. Paper# 2200925 (doi:10.13031/aim.202200925).

[8] Bist, R. L. Chai, **Yang, X.**, S. Subedi. 2022. Air quality in cage-free hen houses during pullets production. 2022 ASABE Annual International Meeting. Paper# 2200329 (doi:10.13031/aim.202200329).

[9] Bist, R. B, S. Subedi and **X, Yang**, L. Chai. Detecting cage-free hens bumblefoot with deep learning models. 2023 Poultry Science Association (PSA) Annual Meeting. Jul 9-13. Philadelphia, PA.

[10] Bist, R. B, S. Subedi and **X, Yang**, L. Chai. Synergistic effect of electrostatic particle ionization and bedding management on particulate matter and ammonia reduction in cage-free hen houses 023 Poultry Science Association (PSA) Annual Meeting. Jul 9-13. Philadelphia, PA.

[11] **Yang, X.**, Bist, R., Subedi, S., L. Chai. A automatic system for grading and sorting cage-free eggs based on computer vision. 2023 Poultry Science Association (PSA) Annual Meeting. Jul 9-13. Philadelphia, PA.

[12] Bist, R.B., Chai, L., **Yang, X**. and Subedi, S., 2023. Effects of artificial dusk lighting on perching behaviors of cage-free laying hens. In *2023 ASABE Annual International Meeting* (p. 1). American Society of Agricultural and Biological Engineers.

[13] Bist, R.B., Chai, L., **Yang, X**. and Subedi, S., 2023. Cage Free Hens' Feather Pecking Management. In *2023 ASABE Annual International Meeting* (p. 1). American Society of Agricultural and Biological Engineers.

[14] Subedi, S., Bist, R., **Yang, X.**, L. Chai.Multiple Behavior Classification of Cage-free Laying Hens using Deep Learning. 2023 International Conference on Integrative Precision Agriculture. May 18-19. Athens, GA.

[15] **Yang, X.**, Bist, R., Subedi, S., L. Chai. A computer vision based automatic system for egg grading and defect detection. 2023 International Conference on Integrative Precision Agriculture. May 18-19. Athens, GA

[16] Bist, R. B, S. Subedi and **X, Yang**, L. Chai. An integrated engineering method for mitigating air pollutant emissions from cage-free hen houses. 2023 UGA Cleantech Symposium.

[17] Bist, R. B, S. Subedi and **X, Yang**, L. Chai. Bedding management for suppressing particulate matter in the cage-free layer house. 2022 *ASABE Annual International Meeting*.

[18] **Yang, X.**, L. Chai, R. Bist, and S. Subedi. Detecting cage-free laying hens on litter floor with machine vision. 2022 Poultry Science Association (PSA) Annual Meeting. July. 11-14, San Antonio, TX.

[19] **Yang, X.**, L. Chai, R. Bist, and S. Subedi. Monitoring litter quality in cage-free facilities with W-36 pullets. 2022 Poultry Science Association (PSA) Annual Meeting. July. 11-14, San Antonio, TX.

[20] Bist, R. B, S. Subedi and **X, Yang**, L. Chai. Bedding management for suppressing particulate matter in the cage-free layer house. 2022 oultry Science Association (PSA) Annual Meeting. July. 11-14, San Antonio, TX.

[21] Bist, R. B, B, Paneru, S. Subedi and **X, Yang**, L. Chai.Tracking dustbathing behavior of cage-free laying hens with machine vision technologies. Jan 30-Feb 1, Atlanta, GA.

[22] **X, Yang**, Bist, R. B, S. Subedi and B, Paneru, L. Chai.Deep learning algorithms for tracking individual chicken for locomotion analysis. Jan 30-Feb 1, Atlanta, GA.

[23] Bist, R. B, **X, Yang**, S. Subedi and B, Paneru, L. Chai.Automatic detection and scoring of footpad dermatitis in poultry utilizing YOLOv8-FPD models. Jan 30-Feb 1, Atlanta, GA.

[24] Paneru, B., Bist, R., **Yang, X.**, & Chai, L. (2024). Using Machine Learning to Detect Dustbathing Behavior of Cage-free Laying Hens Automatically. In 2024 ASABE Annual International Meeting (p. 1). American Society of Agricultural and Biological Engineers. June 28-August 1, Anaheim, CA.

[25] Bist, R. B., Bist, K., **Yang, X.**, Paneru, B., & Chai, L. (2024). Automatic Detection and Scoring of Footpad Dermatitis in Laying Hens Using Machine Learning Models. In 2024 ASABE Annual International Meeting (p. 1). American Society of Agricultural and Biological Engineers. June 28-August 1, Anaheim, CA.

[26] Paneru, B., Bist, R., **Yang, X.**, & Chai, L. (2024). Detecting Perching Behavior of Cage-Free Laying Hens with Machine Vision Technologies. In 2024 ASABE Annual International

Meeting (p. 1). American Society of Agricultural and Biological Engineers. June 28-August 1, Anaheim, CA.

[27] **Yang, X.**, Bist, R., Paneru, B., & Chai, L. (2024). Advanced Machine learning Techniques for Monitoring Poultry Movement Patterns. In 2024 ASABE Annual International Meeting (p. 1). American Society of Agricultural and Biological Engineers. June 28-August 1, Anaheim, CA.

[28] Bist, R. B., Bist, K., **Yang, X.**, Paneru, B., & Chai, L. (2024). Machine Learning Model for Detection, Segmentation, and Tracking of Individual Cage-free Laying Hens. In 2024 ASABE Annual International Meeting (p. 1). American Society of Agricultural and Biological Engineers. June 28-August 1, Anaheim, CA.

[29] Bist, R. B., Regmi, P., **Yang, X.**, Subedi, S., Paneru, B., & Chai, L. (2024). Comparative Assessments of Cage-free Pullet Age, Activities, and Impacts on Dust Concentration Using Accelerometer-Based Activity Sensors. In 2024 ASABE Annual International Meeting (p. 1). American Society of Agricultural and Biological Engineers. June 28-August 1, Anaheim, CA.

Presentations:

[1] **Yang, X**, L. Chai, R. Bist, S. Subedi. Monitoring litter quality in cage-free facilities with W-36 pullets. 2022 International Poultry Scientific Forum (IPSF), Jan. 22-23, Atlanta, GA. (Post Presentation).

[2] **Yang, X**., Bist, R., Subedi, S., L. Chai. Tracking cage-free laying hens on litter floor with machine vision. 2023 International Poultry Scientific Forum (IPSF), Jan. 22-23, Atlanta, GA. (Oral Presentation).

[3] **Yang, X**., L. Chai, R. Bist, and S. Subedi. Detecting cage-free laying hens on litter floor with machine vision. 2022 Poultry Science Association (PSA) Annual Meeting. July. 11-14, San Antonio, TX. (Oral Presentation).

[4] **Yang, X**., Bist, R., Subedi, S., L. Chai. A deep learning method for detecting cage- free hens on the litter floor. 2022 Poultry Science Graduate Research Forum Department of Poultry Science UGA. May 4. Athens GA. (Oral Presentation).

[5] **Yang, X**, L. Chai, R. Bist, S. Subedi, and Z. Wu. Monitoring cage-free laying hens with deep learning models. 2023 US Livestock Farming Conference. May 21-24. Knoxville, TN (Oral Presentation).

[6] **Yang, X**., Bist, R., Subedi, S., L. Chai. A computer vision based automatic system for egg grading and defect detection. 2023 International Conference on Integrative Precision Agriculture. May 18-19. Athens, GA (Poster Presentation).

[7] **Yang, X**., Bist, R., Subedi, S., L. Chai. A automatic system for grading and sorting cage-free eggs based on computer vision. 2023 Poultry Science Association (PSA) Annual Meeting. Jul 9-13. Philadelphia, PA (Oral Presentation).

[8] **Yang, X**., Bist, R., Subedi, S., L. Chai. Deep learning algorithms for tracking individual chicken for locomotion analysis. 2024 International Poultry Scientific Forum (IPSF), Jan. 30-Feb 1, Atlanta, GA. (Oral Presentation).

[9] **Yang, X**., Bist, R., Paneru, B., & Chai, Advanced Machine learning Techniques for Monitoring Poultry Movement Patterns. 2024 American Society of Agricultural and Biological Engineers (ASABE) Annual International Meeting. June 28-August 1, Anaheim, CA. (Oral Presentation)

AWARDS

- Poultry science forum 3rd prize, 2022
- Student Hackathon Poultry Track Competition 1st Prize, 2023
- Graduate student summer research grand, 2023
- Gainesville Spring Chicken Scholarship Award 1st Prize, 2023
- AOC Graduate Academic Achievement Award, 2024
- AOC Student Research Presentation Award, 2nd Prize, 2024

REVIEW

- The First Workshop on DL-Hardware Co-Design for AI Acceleration 2023
- IEEE Transactions on Neural Networks and Learning Systems 2 times (Impact factor: 10.4)
- Frontiers in Bioengineering and Biotechnology (Impact factor: 5.7)
- 2nd U.S. Precision Livestock Farming Conference 2 times
- Process Biochemistry 3 times (Impact factor: 7.9)
- Computers and electronics in Agriculture 5 times (Impact factor: 8.3)
- Artificial Intelligence in Agriculture (Impact factor: 8.0)
- Biosystems Engineering (Impact factor: 5.1)
- British Poultry Science (Impact factor: 2.0)
- PeeJ Computer Science 17 times (Impact factor: 3.8)
- Frontiers in Medicine (Impact factor: 3.9)
- Frontiers in Immunology (Impact factor: 7.3)
- Animals 17 times (Impact factor: 3.20)
- Discover Oncology 2 times (Impact factor: 4.7)
- Frontiers in Immunology (Impact factor: 7.3)
- BMC Bioinformatics 10 times (Impact factor: 3.0)
- Computational and Mathematical Methods 2 times (Impact factor: 0.9)
- Animals (Impact factor: 3.2)
- PLOS ONE 7 times (Impact factor: 3.7)
- Poultry Science (Impact factor: 4.4)
- Briefings in Functional Genomics 2 times (Impact factor: 4.0)
- Applied Sciences 4 times (Impact factor: 2.7)
- Electronics 13 times (Impact factor: 2.9)
- Machines 2 times (Impact factor: 2.6)
- Algorithms 2 times (Impact factor: 2.3)
- Vehicles 2 times ((Impact factor: 2.2)
- Computers (Impact factor: 2.80)
- Signals
- Medicine (Impact factor: 2.6)
- American Society of Agricultural and Biological Engineers (Impact factor: 1.5)
- Internal Journal of Molecular Sciences (Impact factor: 5.6)
- Engineering Open Access 21 times (Impact factor: 1.2) (**Served as editor**)
- Journal of Nursing & Healthcare 14 times (Impact factor: 1.9) (**Served as editor-in-chief**)

MEMBERSHIPS

- Poultry Science Association (PSA)
- World's Poultry Science Association (WPSA)
- American Society of Agricultural and Biological Engineers (ASABE)
- Association of Overseas Chinese Agricultural, Biological, and Food Engineers (AOCABFE)