Shihong Yang

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Academic Profiles

- *__Research Interest__: Precision Livestock Farming*
  - Investigated the use of B-ultrasound imaging to predict semen quality in young boars, focusing on image brightness, testicular area, and probe angle to improve prediction accuracy in commercial farm settings.
  - Currently focusing on the application of deep learning to detect behavioral changes associated with common production diseases in cattle, such as mastitis, respiratory infections, and lameness, with the goal of enabling early diagnosis and improving animal welfare.
  - Exploring edge computing solutions for on-farm deployment of lightweight AI models, making real-time behavior and health monitoring more practical.
  - **ORCID**: https://orcid.org/0009-0008-4315-0830
  - **Google Scholar**: https://scholar.google.com/citations?user=7LKmlBkAAAAJ

Education

- **Virginia Polytechnic Institute and State University (Virginia Tech)**   *Jan. 2023 – Present   Blacksburg, USA*

  Ph.D., Animal Science   *Department of Animal Science, College of Agriculture and Life Sciences*

  GPA 3.80/4.00   *Arithmetic Mean Score : 93.40/100.00*
  - **Advisor**: Dr. C. P. James Chen
  - **Committee**: Dr. Christina Petersson-Wolfe, Dr. Robin White, Dr.Sebastián Umaña Sedó
  - **Relevant Coursework**: Machine Learning (CS 5805), Advanced Machine Learning (ECE 5424), Introduction to Artificial Intelligence (CS 5804), Information Visualization (CS 5764), Bayesian Statistics (STAT 5444).

- **Huazhong Agricultural University (HZAU)**   *Aug. 2016 – May 2021   Wuhan, China*

  B.S., Veterinary Medicine   *Department of Clinical Veterinary Medicine, College of Veterinary Medicine*

  GPA 3.46/4.00   *Arithmetic Mean Score : 86.70/100.00*
  - **Rewards & Scholarship**: Merit Student (2017-2018, 2018-2019), Excellent Student Cadre (2018-2019), Excellent League Member (2018-2019), Outstanding cadres of Student Association (2018).
  - **Relevant Coursework**: Calculus, Linear Algebra, Probability Theory, Veterinary Statistics and Experimental Design, VB.NET, Animal Genetics, Veterinary Imaging Diagnostics, Veterinary Operational Surgery, Veterinary Obstetrics.

- **Summer School, University of California, Berkeley**   *June 2019 – Sep. 2019   Berkeley, USA*

  GPA 3.82/4.00
  - **Human Physiology**: Acquired, processed and analyzed diabetes/EMG data using Python and Excel. Implemented independent Investigation on physiological stress and delivered a report and a presentation.
  - **Public Health**: Collected the abortion rates of women in each country and analyzed the impact of policies on women's physical health by Python. Delivered the final data assignment summary and policy briefs.

Presentations & Posters

- **The 3rd U.S. Precision Livestock Farming (USPLF) Conference, Lincoln, NE, USA**   *June 2025*

  Poster presentation
  - **Shihong Yang**, Yijian Huang, Jeremy Howard, Vance Brown, and C. P. James Chen.   Characterizing the Predictability of High Semen Quality Potential in Boars Using B-Ultrasound Imaging.

- **The American Society of Animal Science (ASAS) Annual Meeting, Hollywood, FL, USA**   *July 2025*

  Oral presentation
  - **Shihong Yang**, Yijian Huang, Jeremy Howard, Vance Brown, and C. P. James Chen.   Characterizing the Predictability of High Semen Quality Potential in Boars Using B-Ultrasound Imaging.

Manuscripts Under Preparation

1. **Shihong Yang**, Yijian Huang, Jeremy Howard, Vance Brown, and C. P. James Chen.   Characterizing the Predictability of High Semen Quality Potential in Boars Using B-Ultrasound Imaging.   In prep.

Research Experience

☐ **The Cao Neurobiology Imaging Lab, Huazhong Agricultural University**   *May 2019 – May 2021*

Dissertation: Comparative study on CASFISH for applications.

- Synthesized the fusion protein by CRISPR/Cas9, which has the functions of targeting and GFP fluorescence.
- Utilized a reconstructed sgRNA scaffold, which can specifically bind to dCas9-GFP for the purpose of signal amplification.
- Images were collected on Immunofluorescence confocal microscopy.
- Used Graphpad Prism 5.0 in data analysis, conducted t test to determine the mean deviation.

☐ **The Song Viral Genomics and Protein Lab, Huazhong Agricultural University**   *Sep. 2018 – Jan. 2020*

Project: Expression and study on the activity of PCV2-Rep-C.

- Constructed the recombinant plasmid to induce escherichia coli, which express specific protein PCV2-Rep-C.
- Purified PCV2-Rep-C by affinity chromatography. Determined the activity of the purified protein.

☐ **MCB 32L: Introduction to Human Physiology Lab, University of California, Berkeley**   *June 2019 – Sep. 2019*

- Modeled force–voltage relationship using linear regression on human physiology data.
- Analyzed and visualized the EMG data using Python and Jupyter Notebook.

☐ **The Lilu Microbiological Lab, Huazhong Agricultural University**   *Apr. 2018 – June 2019*

Project: Effects of Cortisol on Growth of Actinobacillus Pleuropneumoniae in Pigs.

- Completed bacterial culture and passage and measured optical density with spectrophotometer.
- Studied and analyzed the data collected for microbial growth curve in Excel.

Work Experience

Teaching Assistant: ALS 3204 Animal Nutrition and Feeding	Fall/2023	Virginia Tech
Teaching Assistant: APSC 2714 Design of Precision Animal Agriculture Systems	Spring/2025	Virginia Tech

Technical Skills

- **Cellular & Molecular Biology Skills**: Cell Culture, DNA/RNA/Protein Extraction, PCR, FISH, IHC, Vector Construction and Gene Cloning, Western Blotting, Reverse Transcription, Immunofluorescence, Confocal Immunofluorescence Microscopy.
- **Animal Experiments Skills**: Mastery of husbandry requirements for common species; venipuncture in tail vessels.
- **Programming Skills**: Python, Jupyter, Microsoft Word, Excel, Powerpoint.
- **Languages**: Chinese (Native), English.

Campus Involvement

President/Student Coordinator | The Digital Media department of HZAU's News Center	2019 - 2020
Photography Intern | Huazhong Agricultural University's News Center	2016 - 2019
CORE Member | The Huazhong Agricultural University Debate Society	2016 - 2020