

CURRICULUM VITAE

CAO, DENG

Central State University
Wilberforce, OH 45384
Tel: (937) 376-6624
Email: dcao@centralstate.edu

EDUCATION

- ❖ **Ph.D. in Computer Science**
West Virginia University, U.S.A.
- ❖ **M.S. in Statistics**
West Virginia University, U.S.A.
- ❖ **M.S. in Physics**
West Virginia University, U.S.A.
- ❖ **B.S. in Physics**
Hunan Normal University, China

EMPLOYMENT

Central State University, Wilberforce, Ohio, USA Jan 2013 to Present

- ❖ **Full Professor**, Department of Mathematics and Computer Science
- ❖ **Associate Professor**, Department of Mathematics and Computer Science
- ❖ **Assistant Professor**, Department of Mathematics and Computer Science

GRANTS AND AWARDS

- **Lead-Principal Investigator (PI), NSF Collaborative Research: CISE MSI: RDP: CPS: Enhancing Efficiency and Sustainability in Electric Transportation and Power Systems through Interaction-Aware Management**
\$199,933 (\$600,000 total), 2025-2027
- **Project Director (PD), Ohio Department of Higher Education: Super RAPIDS - Strategic Initiative for Workforce Education and Training for Regional Underrepresented Minorities**
\$719,000, 2024-2025
- **Co-PI, USDA CBG: Building Education and Research Capacity in Unmanned Aerial Systems at Central State University**

Updated 2/26/2025

\$598,814, 2023-2025

- **Co-PI, Center for Connected and Automated Transportation (CCAT): Infusing Sustainability into Connected and Autonomous Vehicles**
\$100,000, 2023-2024
- **Co-PI, Intel Semiconductor Education Program at Central State University (ISEP-CSU)**
\$1,390,000, 2022-2025
- **Google's TensorFlow College Award**
\$10,000, 2022
- **Co-PI, USDA AFRI Foundation: Genetics and Breeding of Mite-Biting Bees for Resilience to Varroa Mites Challenge**
\$187,851, 2020-2022
- **Co-PI, USDA CBG: Sweet Potato Production in Northern Climates - Germplasm Testing, Phenotyping, and Management Techniques**
\$121,582, 2020-2022
- **CSU Team Member, Ohio Department of Higher Education: Regionally Aligned Priorities in Delivering Skills (RAPIDS V) Grant**
\$88,569, 2021-2022
- **PI, USDA Capacity Building Grant: All-in-One Organic Weed and Crop Disease Management Using Directed Energy and Convolutional Neural Networks**
\$299,941, 2019-2024
- **CSU Team Member, Ohio Department of Higher Education: RAPIDS IV Grant**
\$106,754, 2020-2021
- **Summer Faculty Fellowship, Thurgood Marshall College Fund (TMCF) with AFRL**
\$25,000, 2018
- **CSU Team Member, Ohio Department of Higher Education: RAPIDS III Grant**
\$96,854, 2018-2019

Updated 2/26/2025

- **CSU Team Member, Ohio Department of Higher Education: RAPIDS II Grant**
\$41,966, 2017-2018
- **PI, NSF TUES: Software Defined Radio Laboratory Platform for Enhancing Undergraduate Communication and Networking Curricula**
\$600,000, 2013-2017
- **PI, NSF CHPSA Mini-Grant**
\$10,000, 2013-2014
- **Research Scientist, 1890 Land Grant Evans-Allen Funds: Advanced Agriculture Technologies for Small Scale Farms**
Approximately \$500,000/year, 2022-2027
- **Research Scientist, 1890 Land Grant Evans-Allen Funds: Enhanced Crop Production Efficiency through Mechanized Integrated Pest Management Strategies**
Approximately \$500,000/year, 2017-2021

TEACHING EXPERIENCE

1. CPS1000 Computer Ethics
2. CPS1110. Computer Literacy
3. CPS1115. Computer Fundamentals
4. CPS1191. Computer Science I
5. CPS1192. Computer Science II
6. CPS2215. Internet and Web Essentials
7. CPS2220. Assembler Language
8. CPS2300. Cyber Security I
9. CPS2271. Data Structures
10. CPS3316. Computer Networks
11. CPS3200. Computer Algorithms
12. CPS3300. Cyber Security II
13. CPS3320. Database Systems
14. CPS3325. Java Programming
15. CPS3340. Computer Architecture
16. CPS3370. Programming Languages
17. CPS3381. Principles of Operating Systems
18. CPS4210. Artificial Intelligence
19. CPS4410. Formal Languages
20. CPS4420. Software Engineering

Updated 2/26/2025

21. CPS4460. Advanced Topics in Computer Science
22. CPS4895. Senior Project
23. MTH1750 College Algebra
24. MTH2001 Probability & Statistics I

PUBLICATIONS

BOOK CHAPTER(S)

T. Bourlai, N. Kalka, D. Cao, B. Decann, Z. Jafri, F. Nicolo, C. Whitelam, J. Zuo, D. Adjeroh, B. Cukic, J. Dawson, L. Hornak, A. Ross and N. A. Schmid.

Ascertaining Human Identity in Night Environments, in Distributed Video Sensor Networks, Springer, 2011.

JOURNAL PUBLICATIONS(SELECTED)

- **Hongmei Li-ByarLay, Kaila Young, Xaryn Cleare, Deng Cao, and Shudong Luo.**
Biting behavior against Varroa mites in honey bees is associated with changes in mandibles, with tracking by a new mobile application for mite damage identification. Apidologie, 2025.
- **Hongbo Zhang, Deng Cao, Wenjing Zhou, Ken Currie.**
Laser and Optical Radiation Weed Control: A Critical Review, Precision Agriculture, 2024.
- **Hongbo Zhang, Yaping Zhang, Lin Wang, Zhijuan Hu, Wenjing Zhou, Peter W. M. Tsang, Deng Cao, Ting-Chung Poon.**
Study of Image Classification Accuracy with Fourier Ptychography, Applied Science, 2021.
- **Yongjiu Wang, Deng Cao.**
Acceleration of a Test Particle in the Gravitational Field of Central Mass with a Large Number of Magnetic Monopoles, Chinese Physics, 2004.
- **Deng Cao, Yongjiu Wang.**
Accelerating Effect in Kerr-Newman-Kasuya Field, Communications in Theoretical Physics, 2002.

CONFERENCE PAPERS (PEER-REVIEWED, SELECTED)

- **Vikash Kumar, Ashish Ranjan, Deng Cao, Gopalakrishnan Krishnasamy, Akshay Deepak.**
A Sequence-Motif Based Approach to Protein Function Prediction via Deep-CNN Architecture, 15th ICAART Conference, 2023.

Updated 2/26/2025

- **Deng Cao, Marcus Nagle, Rajveer Dhillon, Cadance Lowell, Joshua Jolly.**
Cloud Computing-Based Plant Classifiers and Their Real-Life Research Applications, ASEE Annual Conference, 2022.
- **Rajveer Dhillon, Qianna Moncur, Cadance Lowell, Sakthi Kumaran, Alcinda Folck, Deng Cao.**
Precision Agriculture Techniques for Smallholder Farmers in the US: Status and Potential Opportunities, NGST Conference, 2022.
- **Hongbo Zhang, Wenjing Zhou, Jie Lin, Isreal Williamson, Wakeel Idewu, Deng Cao.**
Robust Direct Laser Image Recognition of Vehicle Parts Among Self-driving, Frontiers in Optics + Laser Science (FiO LS) Conference and Exhibition, 2021.
- **Deng Cao, Cadance Lowell, Craig M. Schluttenhofer, Augustus Morris, Austin R. Erdman, Jeffrey Taylor, Torry Johnson.**
Undergraduate Research: Deep Learning Based Plant Classifiers and Their Real-Life Research Applications, ASEE Annual Conference, 2020.
- **Deng Cao, Cadance Lowell, Augustus Morris.**
Undergraduate Research: Introducing Deep Learning Based Image Classification and Object Detection to Undergraduate Students, ASEE Annual Conference, 2018.
- **Deng Cao, Zhiqiang Wu, Bin Wang, Chi-Hao Cheng.**
Undergraduate Research: Adaptation and Evaluation of Software Defined Radio Based Laboratories, ASEE Annual Conference, 2018.
- **Zhiqiang Wu, Bin Wang, Chi-Hao Cheng, Deng Cao, Zhiping Zhang.**
Software Defined Radio Based Mixed Signal Detection Laboratories for Enhancing Undergraduate Communication and Networking Curricula, ASEE Annual Conference, 2018.
- **Deng Cao, Zhiqiang Wu, Bin Wang, Chi-Hao Cheng.**
Software Defined Radio Based Laboratories in Undergraduate Computer Networking Courses, ASEE Annual Conference, 2016.
Zhiping Zhang, Zhiqiang Wu, Bin Wang, Chi-Hao Cheng, Deng Cao.
Software Defined Radio Based General Modulation/Demodulation Platform for Enhancing Undergraduate Communication and Networking Curricula, ASEE Annual Conference, 2016.
- **Chi-Hao Cheng, Zhiqiang Wu, Bin Wang, Deng Cao.**
Software Defined Radio for Digital Signal Processing Related Courses, ASEE Annual Conference, 2016.
- **Zhiqiang Wu, Bin Wang, Chi-Hao Cheng, Deng Cao, Ashraf Yaseen.**
Software Defined Radio Laboratory Platform for Enhancing Undergraduate Communication and Networking Curricula, ASEE Annual Conference, 2014.
- **Deng Cao, Cunjian Chen, Donald Adjeroh, Arun Ross.**
Predicting Gender and Weight from Human Metrology Using a Copula Model, International Conference on Biometrics: Theory, Applications and System, 2012.
- **Deng Cao, Cunjian Chen, Marco Piccirilli, Donald Adjeroh, Thirimachos Bourlai, Arun Ross.**

- Can Facial Metrology Predict Gender?* International Joint Conference on Biometrics, 2011.
- **Donald Adjero, Deng Cao, Marco Piccirilli, Arun Ross.**
Predictability and Correlation in Human Metrology, International Workshop on Information Forensics and Security, 2010.

PRESENTATIONS (SELECTED)

Oral Presentation, “Robust Direct Laser Image Recognition of Vehicle Parts Among Self-driving,” *Frontiers in Optics + Laser Science (FiO LS)* conference and exhibition, 2021.

Oral Presentation, “Undergraduate Research: Deep Learning Based Plant Classifiers and Their Real-Life Research Applications”, *American Society for Engineering Education (ASEE) Annual Conference*, 2020.

Keynote Address, “Building your Agricultural Network Using Neural Networks”, *Outreach Education and Technical Assistance Farmers Conference (O.E.T.A.)*, CSU, 2019.

Poster Presentation, “A Real Time Weed Classifier Using Convolutional Neural Networks,” *Association of 1890 Research Directors (ARD) symposium*, 2019.

Oral Presentation, “Undergraduate Research: Adaptation and Evaluation of Software Defined Radio Based Laboratories,” *American Society for Engineering Education (ASEE) Annual Conference*, 2018.

Oral Presentation, “Undergraduate Research: Introducing Deep Learning Based Image Classification and Object Detection to Undergraduate Students,” *American Society for Engineering Education (ASEE) Annual Conference*, 2018.

Poster Presentation, “Software Defined Radio based Mixed Signal Detection Laboratories for Enhancing Undergraduate Communication and Networking Curricula,” *American Society for Engineering Education (ASEE) Annual Conference*, 2018.

Oral Presentation, “Software Defined Radio based Laboratories in Undergraduate Computer Networking Courses,” *American Society for Engineering Education (ASEE) Annual Conference*, 2016.

Oral Presentation, “Predicting Gender and Weight from Human Metrology using a Copula Model,” *International Conference on Biometrics: Theory, Applications and System*, 2012.

Poster Presentation, “Can facial metrology predict gender?” *International Joint Conference on Biometrics*, 2011.

Honored Poster Presentation, “Pair Distribution Function of Silicon/Silicon Nitride Interface,” *American Physical Society Meeting*, 2006.

PROFESSIONAL TRAINING

Seminar or Workshop

- Certified Apple Teacher with Swift Playgrounds
- SAS Certified Programmer

PROFESSIONAL AFFILIATIONS

- University partnership program manager, education partnership between CSU and AFRL
- Member, American Society for Engineering Education (ASEE)
- Member, American Association of University Professors (AAUP)

PROFESSIONAL SERVICE

Guest Editor

Sensors and Associated Artificial Intelligence in Agricultural Applications for Specialty Crops, a special issue of Sensors (ISSN 1424-8220), 2020-2021

Member, Computer Science and Information Technology Faculty Panel, Ohio Guaranteed Transfer Pathways (OGTP), Ohio Department of Higher Education, 2019 - present

Peer-Reviewed Articles for:

- Neural Computing and Applications journal (2014 - present)
- American Society for Engineering Education Annual Conference (2018 - present)

UNIVERSITY SERVICES

- Chair, Department of Mathematics and Computer Science, 2023-present