

CHENGZHE SUN

Laboratory Manager & Research Assistant
Department of Computer Science and Engineering
University at Buffalo, State University of New York
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Education

- Doctor of Philosophy: Computer Science and Engineering, University at Buffalo** 08/2022 to present
- Work in UB Media Forensics Lab (MDFL) focusing on media forensics and Audio deepfake.
- Master of Science: Engineering Science, Focus on Data Science (UBDS), University at Buffalo** 09/2018 to 02/2020
- Core foundation in big data and analysis by obtaining knowledge, expertise, and training in data collection and management, data analytics, scalable data-driven discovery, and fundamental concepts.
- Bachelor of Science & Arts: Computer Science and Mathematics (Double Degree) University at Buffalo** 08/2014 to 08/2018
- Cum laude graduate, Leadership Award (2014-2017), Dean's list (2014-2017)

Experience

Research Scientist 07/2024 to present
DART Collective · Part-time Buffalo, NY

- Design, develop, and implement AI models and algorithms for audio generation, analysis, and manipulation.

Project Manager 02/2023 to present
University at Buffalo · Full-time Buffalo, NY

- Deepfake O Meter - An Open Platform Integrating State-of-the-Art Methods for AI-generated Image, Video, and Audio Detection.
- Leading roadmap, cross-functional coordination, user feedback, and releases for an open benchmarking platform for deepfake detection.

Laboratory Manager 08/2022 to present
University at Buffalo · Full-time Buffalo, NY

- Schedule lab or equipment use time for staff.
- Responsible for purchasing lab supplies and preparing ordering lists.
- Manage research projects.

Research Project Assistant 08/2022 to present
The Research Foundation for SUNY · Full-time Buffalo, NY

- UB Media Forensics Lab (MDFL)
- Focusing on Deepfake Audio Detection

Data Analyst 05/2020 to 01/2022
China Telecom Americas Washington, District of Columbia

- Managing and analyzing user data.
- Maintaining database systems.

Data Scientist Intern 05/2019 to 02/2020
Imaginus Training Buffalo, NY

- Create ETL methods to acquire data from primary or secondary sources and maintain database systems.
- Identify, analyze, and interpret potential trends or patterns and work with management to prioritize business and information needs. Used forecasted data to help locate and define new process opportunities. Produced test scripts for automated testing of new software.

Student Researcher/Employee 02/2016 to 09/2019
University at Buffalo Buffalo, NY

- Researcher with Professor Gary Berger in International Business, creating/presenting information on "Social and Business Differences between China and America" and selecting business/society topics. Utilized econometric models and Microsoft Excel to evaluate factors causing interference.
- Student Employee in University Dining & Shops: Train and manage other students, resulting in increased revenue and reduced costs.

Projects

- Forensic Analysis of Segmental Speech Features**, University at Buffalo **08/2025 to present**
- Investigating the use of segmental speech features for more robust and nuanced deepfake audio detection, building on collaboration with other researchers.
- Landscape Survey of Generative AI Technologies and Their Real-World Impacts**, University at Buffalo **10/2024 to present**
- NSF Center for Identification Technology Research (CITeR), 2024 - 2026, \$400,000.
 - We aim to survey the landscape of DeepFake generation methods and their state-of-the-art performance.
- AI Synthetic Video Detection Using Multi-Model Manipulation**, University at Buffalo and NSF CITeR **10/2024 to present**
- 24F-02B (NSF CITeR) \$50,000
 - Our objective is to develop a multi-modal deepfake detection model that integrates audio and video analysis to overcome the limitations of existing methods.
- A Comprehensive Dataset for Deepfake Audio Detection**, University at Buffalo and NSF CITeR **04/2024 to 11/2025**
- 24S-01B (NSF CITeR) \$50,000
 - Development and curation of a large-scale, diverse dataset specifically designed to train and benchmark deepfake audio detection models.
- NSF Convergence Accelerator: Deception Awareness and Resilience Training (DART)** **08/2022 to present**
- National Science Foundation, Project 2137871, 2022-2024, \$5,000,000
 - DART is a cross-disciplinary, multi-institutional, user-centered effort to develop games to help older adults recognize and navigate scams.
- A Benchmark Dataset for Neural Vocoder Identification**, University at Buffalo and NSF CITeR **08/2022 to 08/2023**
- 22S-01B (NSF CITeR) \$50,000
 - Work on setting up neural vocoder models, generating data using voice conversion models, and developing baseline vocoder identification models.
- Twitter user data analysis**, University at Buffalo and Clemson University **08/2022 to 08/2023**
- Work on managing and supporting the research team with Twitter data processing and analysis.
- DeepFake-o-meter**, University at Buffalo **08/2022 to present**
- Maintenance DeepFake-o-meter, which is an open platform integrating state-of-the-art Deepfake detection methods.
 - Work on managing and supporting the research team on DeepFake-o-meter refinement.
 - website: https://zinc.cse.buffalo.edu/ubmdfl/deep-o-meter/landing_page
- Audio Deepfake Detection**, University at Buffalo and Johns Hopkins Applied Physics Laboratory (APL) **08/2021 to 08/2022**
- Work on creating LibriVoc as a new open-source, large-scale dataset for studying neural vocoder artifact detection data.
 - Develop a model for vocoder identification based on the RawNet2 model.
- Analytics for real estate Services**, Imaginus Training, Buffalo, NY **05/2019 to 02/2020**
- Predictive modeling and Business Analytics at Imaginus Training & HUNT. Acquire data from primary or secondary data sources and maintain databases/data systems.
- Statistical Data Mining – Spotify**, University at Buffalo **01/2019 to 05/2019**
- Create a better music app using Collaborative Filtering and Natural Language Processing models (NLP) to analyze user behavior and create their own uniquely powerful discovery engine.
- Tiny Piazza**, University at Buffalo **01/2019 to 05/2019**
- Design and implement the database schema for TinyPiazza, focusing on User management, Course management, Post management, User-Course relationship management, and User-Post relationship management.
- Image Classification with Decision Trees and SVM**, University at Buffalo **01/2018 to 05/2018**
- Analyzing datasets, using machine learning to classify the flower samples into different species. Explore supervised and unsupervised classification. Using Image classification and SVM in cultivation, geology, and water quality.
- Simulation of a Drone Collision Avoidance System (DCAS)**, University at Buffalo **08/2017 to 01/2018**

- Design, implement, and test “Drone Collision Avoidance System (DCAS),” Using a GPS/position-based algorithm to determine collision detection.

Skills and Honors

- Proficiency in **Python, R, SQL**, Jupiter Notebook, Sequence diagrams, Database, Data mining, Database management, Reports generation and analysis, MS Office, and TensorFlow. Machine Learning, Data mining, DATABASE, and Pattern Recognition (Coursera Certificate)
- Familiar with Java, JavaScript, HTML/CSS/jQuery, MATLAB, SQL Server Integration Services, PowerBI, Compatibility testing, Data-Oriented Computing, ETL, and Business Intelligence.
- Good verbal/communication skills in English and Chinese (Mandarin)
- **TESTDOME SQL, RANKING IN THE TOP 10% (2018, 2019)**
- The Chair’s Fellowship, University at Buffalo (2022)

Publications

- Google Scholar: <https://scholar.google.com/citations?user=HFVroDAAAAAJ&hl=en>

Conference/Workshop Papers

- [ICCVW25A] Datta, Soumya Kanti, Ranga, Tanvi, Sun, Chengzhe and Lyu, Siwei. PIA: Deepfake Detection Using Phoneme-Temporal and Identity-Dynamic Analysis. In Proceedings of the APAI Workshop at ICCV, 2025.
- [AVSS25] Jialing Cai, Chengzhe Sun, Soumya Kanti Datta and Siwei Lyu. A Landscape Survey of Tools and Real-World Cases of AI-Generated Media. In Proceedings of the IEEE International Conference on Advanced Visual and Signal-Based Systems (AVSS), Tainan, Taiwan, 2025.
- [MIPR24] Ju, Yan, Sun, Chengzhe, Jia, Shan, Hou, Shuwei, Si, Zhaofeng, Datta, Soumya Kanti, Ke, Lipeng, Zhou, Riky, Nikolich, Anita, and Lyu, Siwei. DeepFake-O-Meter v2. 0: An Open Platform for DeepFake Detection. In 2024 IEEE 7th International Conference on Multimedia Information Processing and Retrieval (MIRP), 2024.
- [CVPRW23b] Chengzhe Sun, Shan Jia, Shuwei Hou, and Siwei Lyu. AI-Synthesized Voice Detection Using Neural Vocoder Artifacts. In CVPR Workshop on Media Forensics, Vancouver, Canada, 2023.

Book chapters

- [BOOKCHAP24] Sun, Chengzhe, AlBadawy, Ehab, Davison, Timothy F., Robinson, Sarah R., Chang, Ming-Ching and Lyu, Siwei. Using Vocoder Artifacts For Audio Deepfakes Detection. In Adversarial Multimedia Forensics, Cham, 2024.

Journal

- [CSL26] (as participating team). ASVspooF 5: Design, collection and validation of resources for spoofing, deepfake, and adversarial attack detection using crowdsourced speech. Computer Speech & Language, 95():101825, 2026.

Professional Services

- Journal Reviewer:
 - ACM Transactions on Multimedia Computing Communications and Applications (2025)
 - IEEE Transactions on Multimedia (2024)
 - IEEE Access (2023)
- Conference Reviewer:
 - NeurIPS (2025), IEEE MIPR (2024, 2025), IEEE AVSS (2023, 2024, 2025), IEEE IJCB Special Session (2024)
- Conference Organization:
 - Program Committee, AIGC (2024, 2025), Web and Local Chair, IEEE AVSS (2024)
- Guest Speaker:
 - CAE IN CYBERSECURITY SYMPOSIUM (2022)
- Community Awards:
 - Special Contributions Award, The Erie County Legislature (2021-2023, 2023-2025)
 - Outstanding Service Award, Chinese Club of WNY (2021-2023, 2023-2025)
- Guest Lecturer:
 - CSC 591/791, ECE 591: Cyber-Physical System
 - North Carolina State University (Fall 2024)
 - Delivered a guest lecture on "Advanced Deepfake Forensics" for graduate students.

- CSE 4/574: Introduction to Machine Learning
University at Buffalo (Spring 2024)
Presented on the "Principles and Challenges of Deepfake Detection" in an introductory course.
- Research Mentor:
UB Media Forensics Lab (2023 - Present)
Mentor undergraduate and graduate students on cutting-edge research projects.
Provide guidance on experimental design, data analysis, and scientific writing.
Assist students in preparing research for conference submissions and publications.