# Wenhao He

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## EDUCATION

**•University at Buffalo, The State University of New York** *Aug 2022 - May 2024*

*Master of Science in Engineering Science focus on Artificial Intelligence*

**Coursework:** Machine Learning, Deep Learning, Computer Vision, Reinforcement Learning, Data Intensive Computing, Pattern Recognition

**•University at Buffalo, The State University of New York** *Aug 2018 - May 2022*

*Bachelor of Science in Computer Science*

**Coursework:** Data Structures, Computer Networking, Web Application, Algorithms and Complexity, Systems Programming, Theory of Computation, Computational Linguistics, Malware Analysis

## EXPERIENCES

**CAN International Corp: Software Engineer Internship** *Apr 2024 - Present*

New York, NY · Remote

- Technology used: **React Native, JavaScript, Expo, Microsoft Azure, Firebase**
- Developed a full-stack CAN membership app with job searching and mentor-mentee matching features
- Created a platform to connect high school students and college students for tutoring and college application, supporting over 500 users
- Implemented secure data storage, authentication, real-time data fetching with Azure and Firebase, and payment integration for business purposes
- Conducted extensive testing and debugging to meet all functional and performance requirements

## PROJECTS

**Audio Cloning: Project Leader & Software Engineer** *Aug 2023 - Feb 2024*

Developed SV2TTS model to replicate a judge's voice from the Brown v. Board case

- Technology used: **Python, PyTorch, Matplotlib, Librosa**
- Implemented a **three-stage pipeline deep learning SV2TTS** to clone voices unseen during the training
- Applied UMAP for efficient dimensionality reduction, preserving key characteristics of voice data
- Conducted experiments with different text lengths and both seen and unseen texts to enhance audio generation
- Achieved 90% voice replication accuracy through auditory comparison, enhancing digital record authenticity

**Costumer Maximum Open Credit Prediction System: Software Engineer** *Aug 2023 - Jan 2024*

ML model to estimate customer credit limits using comprehensive financial data

- Technology used: **Python, Numpy, Pandas, Scikit-learn, Hadoop**
- Designed an intuitive GUI for easy interaction with the prediction system
- Preprocessed data from bank customer dataset, implementing cleaning and transformation techniques
- Conducted EDA with Hadoop on large datasets, gaining insights into key variables for credit predictions
- Developed, compared, and evaluated six different machine learning models to estimate credit limits, selecting the best-performing model for optimizing performance

**Monocular Depth Estimation in Single Image: Software Engineer** *Feb 2023 - May 2023*

Implemented encoder-decoder CNN structure for 3D distance estimation from 2D images

- Technology used: Python, PyTorch, OpenCV, Matplotlib
- Implemented encoder-decoder CNN with EfficientNet-B5 encoder and 12-layer decoder for depth estimation
- Trained on NYU-Depth V2 dataset with 1,449 labeled and 400k+ unlabeled pairs, improving model depth
- Visualized training outcomes and model performance, aiding continuous model refinement
- Enhanced training data quality through real-time image processing, achieving superior accuracy and efficiency compared to Kaggle baseline model

## TECHNICAL SKILLS

**Cloud/Databases:** MongoDB, MySQL, AWS, Spark
**Frameworks:** Tensor-Flow, Scikit-learn, Hadoop, React/React Native, Flask, Node.JS
**Developer Tools:** GitHub, Git, Docker, Jupyter Notebook, PyCharm, Visual Studio Code