

YUEQIAO CHEN

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EDUCATION

Georgia Institute of Technology

B.Sc. Computer Science

Georgia, USA

Aug 2020 – May 2023

- GPA: 4.00/4.00 (*summa cum laude*)
- Faculty Honors Spring 2023, Fall 2022, Spring 2022, Fall 2021 & Fall 2020
- Core Courses: *Design & Analysis of Algorithms, Robotics and Perception, Machine Learning, Deep Learning, Natural Language Processing, Information Visualization*

University of Georgia

B.Sc. Mathematics

Georgia, USA

Sep 2019 – May 2020

- GPA 3.95/4.00
- President Award 2019 – 2020

RESEARCH EXPERIENCE

University of California, Davis (Visualization and Intelligence Augmentation (VIA) Lab)

Post-baccalaureate Research (Advisor: Prof. Dongyu Liu)

California, USA

Oct 2023 – Present

Interpretable Context-aware Trajectory Prediction

- Designed user interface in trajectory prediction XAI project

University of California, Riverside

Post-baccalaureate Research (Advisor: Prof. Jiachen Li)

Remote

Aug 2023 – Present

Autonomous Vehicle Perception Using Pre-trained Large Language Models

- Designed approaches to use pre-trained LLM to improve autonomous driving
- Enhanced classification of objects' importance while driving

Massachusetts Institute of Technology

Post-baccalaureate Research (Advisor: Prof. Munther Dahleh)

Remote

Jun 2023 – Aug 2023

Cascading Dynamics of Hate Speech Propagation | Python, Networkx

- Developed retweet graphs to capture the diffusion dynamics of hate speech on Twitter and identify centrality
- Employed Erdos-Renyi Model for predictive modeling of hate speech propagation
- Authored an academic manuscript detailing the findings (see Peer Reviewed Publication #2)

Georgia Institute of Technology

Post-baccalaureate Research (Advisor: Prof. Amy Bruckman)

Georgia, USA

Jun 2023 – Sep 2023

Ethical and Legal Implications of AI-Generated Art

- Conducted a comprehensive review of challenges posed by AI-generated content in the contemporary art scene
- Drafted and refined policy recommendations for issues related to copyrights and ownership of AI-generated art
- Authored an academic manuscript detailing the findings (see Peer Reviewed Publication #1)

Vertical Integrated Project - Intelligent Tutoring System Team

Advisors: Prof. James H. McClellan & Mr. Gregorg A Krudysz

Georgia, USA

Jan 2022 – May 2023

Stage 1: Question and Answering System | transformers

- Built an intelligent chatbot to help Georgia Tech TAs handle high volumes of questions in the course
- Implemented different Natural Language Processing models and finetuned them in Python with over 10,000 training examples to predict answers to students' questions
- Created a live Q&A system that achieved a high answer rate to student questions

Stage 2: Question Recommender | SQL, Numpy, Pandas

- Developed an algorithm to intelligently predict students' questions and direct them to pre-prepared answers
- Trained the algorithm on a 1,000-question dataset from DSP textbooks and piazza.com, using question frequency and recency to auto-complete questions in real time while students type

Stage 3: Textbook Summarization and Mind Maps | nltk, PyTorch, html, Javascript

- Extracted summary and keywords to construct a graph visualization for each chapter

PEER REVIEWED PUBLICATIONS

1. **Chen, Y.**, Pandora's Pixel Box: The Rise of AI Art and the Ethical Dilemma of Creativity. *2nd International Conference on Interdisciplinary Humanities and Communication Studies (ICIHCS 2023)*.
2. **Chen, Y.**, Cascading Dynamics of Hate Speech Propagation: Unveiling Network Structures and Probability of Retweeting on Twitter. *2nd International Conference on Software Engineering and Machine Learning (CONF-SEML 2024)*.

WORK EXPERIENCE

Xinzhongguan Intelligence Technology Co., Ltd. (a leading B2B online shopping platform)

Fuzhou, China

Software Engineer (Intern)

Jun – Jul 2022

- Assisted in debugging critical security flaws in HTTP requests, preventing potential losses
- Used a variety of tools (e.g., Postman) to build tests and explore parameters and settings that could compromise security

IN-SCHOOL PROJECTS

Natural Language Processing Project

Jan – May 2023

CS 4650 - Natural Language Processing (Grade: A) | *PyTorch, transformer*

- Developed a model to predict the year of authorship for texts from over 5,000 English books sourced from Internet Archive
- Designed three custom prediction models utilizing both DistilBERT and I-BERT architectures

Deep Learning Project

Jan – May 2023

CS 7643 - Deep Learning (Grade: A) | *PyTorch*

- Engineered a solution to recognize characters from varied image sizes in the dataset from ICDAR 2003 Robust Reading Competitions
- Constructed a Convolutional Neural Network (CNN) that outperformed other models in character recognition
- Optimized configurations for character recognition with hyperparameters and image resizing techniques

Swimming Sonification Project | *processing*

Jan – May 2023

CS 4590 - Computer Audio (Grade: A)

- Developed a real-time sonification system to provide swimmers with immediate feedback on stroke techniques and safety measures
- Implemented an audio feedback mechanism that generated sounds based on parameters like applied force, oxygen levels, and stroke accuracy

Machine Learning Project – Supervised Learning

Sep – Dec 2022

CS 4641 - Machine Learning (Grade: A) | *scikit-learn, matplotlib*

- Used a cleaned dataset containing data on 100,000 used cars in the UK from Kaggle to predict car prices
- Selected features according to heatmap and PCA, and created models using linear regression and decision tree
- Evaluated our predictive models using R square score, achieving 94.5% accuracy

Intelligent Pacman AI

Jan – May 2022

CS 3630 - Introduction to Robotics and Perception (Grade: A)

- Trained AI to play Pacman across a variety of settings with a path-optimization goal
- Implemented Reinforcement/Q-learning using 2000 training games in Python
- Achieved a 90% winning rate across 100 test games

A Tower Defense Game

Sep – Dec 2021

CS 2340 - Objects and Design (Grade: A) | *JavaFX*

- Collaborated with a team of five to develop a Tower Defense game with three levels of difficulties using JavaFX
- Applied software engineering principles including SOLID, GRASP, Design Patterns, and TDD to create a working game and text

EXTRACURRICULAR EXPERIENCES

- Tech Support, Student Government Association IT Board, Georgia Institute of Technology (Jan – May 2023)
- Volunteer, Fujian Disabled Persons' Association (Sep 2016 – Present)

PROGRAMMING

Languages:

- Java, Python, C, LaTeX, Assembly Language, Javascript, CSS, HTML

Tools:

- Networkx, Scikit-learn, Numpy, Pandas, Matplotlib, Processing

Frameworks:

- PyTorch, JavaFX

Areas of Expertise:

- Information Visualization, Audio, Unified Modeling Language, Data Structures and Algorithms, Object-Oriented Design & Programming Principles, Event-Driven Programming Principles, Recursion, Big O Notation, Markov Decision Processes, Reinforcement Learning, Bayesian Networks, Neural Network, Random Variables, Divide and Conquer Algorithms, Dynamic Programming Algorithms, LC-3 Assembly Programming, Ethics in Computing