TIMOTHY S. WANG

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EDUCATION

University of Utah | Kahlert School of Computing | Ph.D. Computer Science (current)

- Advisor: R. Michael Young
- Relevant Courses: Introduction to Human-Computer Interaction

University of Southern California | Viterbi School of Engineering | MS Computer Science (Grad. Aug. 2023)

- **GPA: 4.00/4.00**
- Relevant Courses: Machine Learning for Data Science, Analysis of Algorithms, Database Systems, Affective Computing, Foundations of Artificial Intelligence

University of Southern California | Viterbi School of Engineering | BS Computer Science, Screenwriting Minor (Grad. Aug. 2022)

- **Magna Cum Laude**
- **GPA: 3.84/4.00**
- Relevant Courses: Full Stack Web Development, Theory of Computation, Introduction to Algorithms and the Theory of Computing, Introduction to Artificial Intelligence, Introduction to Software Engineering, Introduction to Computer Systems, Data Structures and Object-Oriented Design, Discrete Methods in Computer Science, Introduction to Probability and Statistics, Introduction to Computer Science, Introduction to Operating Systems, Professional C++

RESEARCH AND EMPLOYMENT EXPERIENCE

Utah's Liquid Narrative Research Group – Ph.D. Student | Aug. 2024 – Present

- Faculty: R. Michael Young
- Researching how to create a more nuanced and fluent computational model for narratives
- Exploring how complex narrative ideas such as character arcs and story structure can be added to AI planning models to generate richer stories

USC's Institute for Creative Technologies Narrative Research Group – Student Researcher | Jun. 2023 – Sep. 2023

- Faculty: Andrew Gordon
- Tested the narrative generation and narrative evaluation capabilities of GPT-3.5
- Created a web application where human users can play a storytelling game against GPT-3.5 and evaluate GPT-3.5's performance
- Served as first author on a published paper on our results for the 2023 International Conference on Interactive Digital Storytelling

USC's Information Sciences Institute – Student Researcher | May 2022 – May 2023

- Faculty: Jonathan May
- Helped to develop a Reddit moderation system to tackle toxic user behavior; tested on Amazon's Mechanical Turk
- Tested OpenAI's GPT-3 as the basis for the moderation system
- Presented updates at weekly meetings

USC's Information Sciences Institute JAUNTS Lab – Student Researcher | Aug. 2021 – May 2022

- Faculty: Jay Pujara
- Analyzed how current conversational AIs respond to an emotional user input
- Created processes to allow a conversational AI to be more emotionally empathetic
- Research through USC's Center for Undergraduate Research in Viterbi Engineering (CURVE) Fellowship

USC's Institute for Creative Technologies Narrative Research Group – Student Researcher | May 2021 – Aug. 2021

- Faculty: Andrew Gordon
- Helped to create an algorithm for converting from a story graph into a human-readable story using full-sentence templates and narrative axioms
- Published a paper on our results for the 2021 International Conference on Interactive Digital Storytelling

USC's Interaction Lab – Data Visualization Researcher | Jun. 2020 – Aug. 2020

- Lead Professor: Dr. Maja Matarić
- Postdoctoral Researcher: Matthew Rueben
- Earned paid position through USC Viterbi Summer Research for Undergraduates (SURE) Program
- Visualized speech, movement, and cue data from human-robot interaction studies using D3.js
- Rectified differences in annotated video data
- Led group meetings with other student researchers

DFNet Research – IT and Finance Intern | May 2019 – Jul. 2019

- DF/Net Research partners with a wide variety of client companies and organizations to provide data management and data analytical solutions. DF/Net Research also develops dfDiscover, a data management software.
- Programmed an implementation of an array, a string encryption program, and a sorting program within company's dfDiscover edit checking programming language
- Updated existing library of edit checking programs for company's data managers
- Implemented a financial model to explore how much money DF/Net is spending for each client every month

PUBLICATIONS

- Wang, T.S., Gordon, A.S. (2023). Playing Story Creation Games with Large Language Models: Experiments with GPT-3.5. In: Holloway-Attaway, L., Murray, J.T. (eds) Interactive Storytelling. ICIDS 2023. Lecture Notes in Computer Science, vol 14384. Springer, Cham. https://doi.org/10.1007/978-3-031-47658-7_28

- Gordon, A.S., Wang, T.S. (2021). Narrative Text Generation from Abductive Interpretations Using Axiom-Specific Templates. In: Mitchell, A., Vosmeer, M. (eds) Interactive Storytelling. ICIDS 2021. Lecture Notes in Computer Science(), vol 13138. Springer, Cham. https://doi.org/10.1007/978-3-030-92300-6_7
- Rueben, M., Syed, M., London, E., Camarena, M., Shin, E., Zhang, Y., ... & Matarić, M. J. (Including Timothy S. Wang) (2021, October). Long-term, in-the-wild study of feedback about speech intelligibility for k-12 students attending class via a telepresence robot. In Proceedings of the 2021 International Conference on Multimodal Interaction (pp. 567-576).

SKILLS

- **Machine Learning:** Scikit-Learn (Linear regression, classification, SVMs, decision trees, unsupervised/semi-supervised learning)
- **C++:** Object-oriented programming and data structures including strings, vectors, linked lists, graphs, trees
- **Java:** Object-oriented programming, multi-threaded code
- **Python:** Artificial Intelligence, Natural Language Processing (HuggingFace), Data Visualization, NumPy, Pandas
- **HTML, CSS, and Other Web:** Website design, Digital Ocean Platform
- **Amazon's Mechanical Turk**
- **Large Language Models:** OpenAI's GPT
- **Microsoft Office:** Proficient in Word, Excel, PowerPoint
- **Data Management:** SQL, Google Cloud Platform, MongoDB
- **LaTeX**
- **Unreal Game Engine**

AWARDS

- USC Presidential Scholar (5.8% of USC students)
- USC Discovery Scholar
- USC Renaissance Scholar
- Tau Beta Pi Member (Top 1/8 of junior class, or top 1/5 of senior class)
- National Merit Scholar Finalist
- USC Mortar Board Member

CONFERENCES ATTENDED

2023 International Conference on Interactive Digital Storytelling | Nov. 2023 | Kobe, Japan

- Presented a presentation of "Playing Story Creation Games With Large Language Models: Experiments With GPT-3.5"

2021 International Conference on Interactive Digital Storytelling | Dec. 2021 | Tallinn, Estonia (Virtual)

- Gave a virtual, oral presentation of "Narrative Text Generation from Abductive Interpretations Using Axiom-Specific Templates"

EXTRACURRICULAR ACTIVITIES

USC Viterbi's Illumin Magazine – Editor | Aug. 2021 – May 2023
- Illumin Magazine: A student led and published STEM magazine
- Served as editor for the magazine, collaborating with other editors on selecting and presenting incredible student written articles on exciting STEM topics

Queers in Engineering, Science, and Technology (QuEST) – Treasurer | Sept. 2018 – May 2022
- Organized professional and social events to build solidarity amongst LGBTQ+ STEM students
- Procured funding and reimbursements for events and helped to lead donation campaigns for LGBTQ+ organizations