Hongwei (Henry) Zhou

4414 Starboard Ct Soquel, CA 95073 | 347-822-1815 | hzhou55@ucsc.edu | normand-1024.github.io

EDUCATION

University of California, Santa Cruz
PhD in Computational Media — Sept 2019 – 2024 (Expected)
M.S. in Computational Media — Mar 2022

New York University, Tandon School of Engineering — Sept 2015 – May 2019
BS in Computer Science, Minor in Game Engineering — GPA: 3.988

AWARDS

Richard W.Block Award (Valedictorian), *New York University, NY* — May 2019
Pearl Brownstein Senior Award for highest GPA, *New York University, NY* — May 2019
Myron M. Rosenthal Award for best academic achievement, *New York University, NY* — May 2018

RESEARCH AND PUBLICATIONS

Exploring Visual Effects to Support Sensemaking Tasks *University of California, Santa Cruz* — Oct 2022

- A preliminary work on exploring the use of visual effects and animations in data visualization tools by looking at video games.
- **Publication**: Zhou, Hongwei, and Angus G. Forbes. "Data Feel: Exploring Visual Effects in Video Games to Support Sensemaking Tasks." arXiv preprint arXiv:2210.03800 (2022).

Deleuzian Understanding of Meaning-Making in Games *University of California, Santa Cruz* — Jul 2022

- Inspired by French Philosopher Gilles Deleuze's *Difference and Repetition*, critique one of the prominent views on how people produce meaning in video game playing. Contribute to the understanding between meaning and game systems in game study.
- **Publication**: Zhou, Hongwei, et al. "On the Maintenance of Meaning: A Deleuzian View on Proceduralism. (in press)" Proceedings of the 2022 DiGRA International Conference. DiGRA 2022, 2022.

Language Embedding Structural Exploration and Visualization *University of California, Santa Cruz* — Oct 2019 – Mar 2022

- Led a research project in utilizing an agent-based model to probe the potential structures in word embedding data extracted from various language models such as Word2Vec & BERT. Able to identify connections between word tokens highlighted by the agent-based model, giving us insights into the semantic knowledge learnt by language models.
- Developed a web visualization tool in Three.js that enables the user to explore word embedding in 3D space. Implemented features such as filtering based on agent-based exploration results and part-of-speech tags.
- **M.S. Thesis**: Zhou, H. (2022). Islands and Bridges of Language: Bio-Inspired Structural Analysis of Language Embedding Data. UC Santa Cruz. ProQuest ID: Zhou_ucsc_0036N_12453. Merritt ID: ark:/13030/m5fn8809. Retrieved from https://escholarship.org/uc/item/6zj1r9ch
- **Publication**: Zhou, Hongwei Henry, et al. "Bio-inspired Structure Identification in Language Embeddings." 2020 IEEE 5th Workshop on Visualization for the Digital Humanities (VIS4DH). IEEE, 2020.

Artificial Intelligence for Games Research, *New York University, NY* — Jun 2018

- Developed an AI agent by combining finite state machine and Monte-Carlo tree search. Analyzed the game code and optimized the Monte-Carlo tree search algorithm to achieve a balance between computational speed and in-game performance.
- **Publication**: Zhou, Hongwei, et al. "A hybrid search agent in pommerman." Proceedings of the 13th International Conference on the Foundations of Digital Games. ACM, 2018..

Atom of Confusion Research, *New York University, NY* — Sep 2017

- Developed 5 different programs that go through Abstract Syntax Tree of Eclipse compiler to find confusing elements in the C and C++ source code. Developed a Clojure program that explores GitHub to gather data on the usage of the confusing operators. Worked closely with the researchers to gather data and hypothesize about programming styles.
- **Publication**: Gopstein, Dan, et al. "Prevalence of confusing code in software projects: atoms of confusion in the wild." Proceedings of the 15th International Conference on Mining Software Repositories. ACM, 2018.

WORK EXPERIENCE

Teaching Assistant — May 2017 - Present

Teaching Assistant for Introduction to 3D Modeling, Game Design Studio series, Game Design Practicum, Game AI, Data Structures for Interactive Media, Foundation of Video Game Design, Game Systems in UCSC and Design and Analysis of Algorithms; Intro to Game Programming; Intro to Database in NYU. Worked with professors to assist students, design homework/projects and grade homework/projects.

Intelligence System Engineer, *Electronic Arts, CA* — May 2018 – Aug 2018

Developed versatile music streaming software that supports multiple digital music formats and real-time manipulation of music content such as tempo change and major/minor switch.