David A. Gonzalez-Maldonado

GRADUATE STUDENT · RESEARCH ASSISTANT · SOFTWARE DEVELOPER

 dagm.io

Education

University of Chicago *Chicago, Illinois*

PH.D. COMPUTER SCIENCES, ADVISED BY DR. DIANA FRANKLIN *Fall 2021 - Present*

University of California, San Diego *La Jolla, California*

B.S. COGNITIVE SCIENCES, MACHINE LEARNING AND NEURAL COMPUTATION SPECIALIZATION *2020*
Minors in Computer Sciences and Math

Expertise and Interests

Human Computer Ineraction • STEM education • Development of educational Games • Full stack web development • ERP paradigm design and administration aimed at young children • Computer graphics and animation • Image processing • Signal processing

Experience

Graduate Research, CANNON Lab (Dr. Diana Franklin) *Chicago, IL*

THE UNIVERSITY OF CHICAGO *March 2021 - Present*
- Authored several research papers
- Leading development of Entwine integrated programming environment
- Using Amazon Web Services to to deploy a series of online services ranging from educational video games to learning management systems and programming editors
- Help run data collection summer camp
- Full-stack development of an integrated programming environment using technologies such as React.js, Flask (python), and DynamoDB
- Using Unity to develop interactive games to teach quantum computing concepts
- Process data from past studies for use in research papers

Teaching Assistant, Introduction to Quantum Computing (Dr. Diana Franklin) *Chicago, IL*

THE UNIVERSITY OF CHICAGO *Winter 2022, Winter 2023*
- Deployed custom made autograders to grade students' python assignments
- Helped students debug and troubleshoot their code
- Led weekly labs covering the course's programming assignments.
- Helped manage the course's Piazza page

Lab Coordinator, Data Science Institute Summer Lab *Chicago, IL*

THE UNIVERSITY OF CHICAGO *March 2022 - August 2022*
- Supervised and mentored a cluster of undergraduate and masters students
- Held weekly office hours to help students with various aspects of their research projects
- Led Python and UNIX shell on-ramp workshops for incoming participants
- Served on admissions committee

Undergraduate Research, Sentia Lab (Dr. Tim Brown) *La Jolla, CA*

UNIVERSITY OF CALIFORNIA, SAN DIEGO *June 2017 - March 2021*
- Administer electroencephalogram (EEG) to young children
- Used the Godot game engine (python/C++) to develop child friendly, event related potential (ERP) paradigms for use in the study
- Led the validation of our ERP paradigms, this entailed piloting any new paradigm on lab members to ensure that the modifications we made to make the paradigms more appealing two young children did not suppress the desired signal
- Trained new undergraduate volunteers on administering EEG
- Automated several clerical/logistical tasks related with running a large scale scientific study

Teaching Assistant, Introduction to Statistical Analysis (Dr. Steve Barrera) *La Jolla, CA*

UNIVERSITY OF CALIFORNIA, SAN DIEGO *January 2020 - March 2020*
- Held weekly discussion sections for 40 students.
- Helped develop quizzes and exams
- Helped manage the course's Canvas website
- Proctored in class midterms with approximately 200 students

Research Contributions

1. Tsan, J. Butler, C. Gonzalez-Maldonado, D. Liu, J. Thomas, C. Franklin, D. (2023). **An Analysis of Gallery Walk Peer Feedback on Scratch Projects from Bilingual/Non-Bilingual Fourth Grade Students**. Proceedings of the 2023 ACM Conference on International Computing Education Research Volume 1 (ICER).

2. Liu, T. Gonzalez-Maldonado, D. Harlow, D. Edwards, E. Franklin, D. (2023). **Qupcakery: A Puzzle Game that Introduces Quantum Gates to Young Learners**. Proceedings of the 54th ACM Technical Symposium on Computer Science Education (SIGCSE).

3. Gonzalez-Maldonado, D. Tsan, J. Eatinger, D. Weintrop, D. Franklin, D. (2022). **Comparison of CS Middle-School Instruction during Pre-Pandemic, Early-Pandemic and Mid-Pandemic School Years**. Proceedings of the 2022 ACM Conference on International Computing Education Research Volume 1 (ICER).

4. Gonzalez-Maldonado, D. Pugnali, A. Tsan, J. Eatinger, D. Franklin, D. Weintrop, D. (2022). **Investigating the Use of Planning Sheets in Young Learners' Open-Ended Scratch Projects**. Proceedings of the 2022 ACM Conference on International Computing Education Research Volume 1 (ICER).

5. Tsan, J. Eatinger, D. Pugnali, A. Gonzalez-Maldonado, D. Franklin, D. Weintrop, D. (2022). **Scaffolding Young Learners' Open-Ended Programming Projects with Planning Documents**. 27th Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE).

6. Gonzalez-Maldonado, D. Dowling, S., Iversen, J., Jernigan, T., Brown, T. T. (2018). **Development of an Interactive Gaming Paradigm with Dry, Wireless Electrophysiological Recording for the Mobile Functional Brain Assessment of Preschool Aged Children**. 6th Biennial Conference of the International Mind, Brain, and Education Society (IMBES).

Grants

2022-23	**Hymen Milgrom Supporting Organization**, Successful Pathways from School to Work grant	*$20,000*
2019-20	**UC San Diego**, Chancellor's Interdisciplinary Collaboratories grant	*$12,200*
2018-19	**UC San Diego**, Triton Research and Experiential Learning Scholars (TRELS) grant	*$3,000*

Honors and Awards

2021	**Recipient**, Crerar Fellowship	*$5,000*
2019	**Recipient**, URS Chancellor's Research Scholarship for Social Sciences	*$5,000*
2018	**Recipient**, AEP Summer Research Scholarship	*$5,000*
2015	**IDEA Scholar**, Jacobs School of Engineering	
2014	**Recipient**, National Hispanic Recognition Program	