Janelle Domantay

University of Illinois Urbana-Champaign | janelle9@illinois.edu | 702-856-6751

EDUCATION

University of Illinois Urbana-Champaign — Urbana, IL
Ph.D. in Computer Science, Artificial Intelligence, GPA 3.94/4.0 — Exp. Apr 2027

University of Nevada, Las Vegas | *Summa Cum Laude* — Las Vegas, NV
B.S. in Computer Science, Math Minor (Honors), GPA 3.74/4.0 — Dec 2021

RESEARCH EXPERIENCE

Research Intern — Golden, CO
Advisor: Juliane Mueller
National Renewable Energy Lab SULI | Jun 2023 - Aug 2023

- Developed sampling strategies for multi-fidelity modeling in the interest of balancing accuracy and computational efficiency.
- Evaluated the effectiveness of various optimization algorithms in improving system performance and achieving optimal solutions.
- Contributed to and collaborated on an existing code base using Python and SMT (Surrogate Modeling Toolbox), enhancing functionality and ensuring code quality.

Student Researcher — Las Vegas, NV
Advisors: Yoohwan Kim and Ju-Yeon Jo
Department of Energy/ MSIPP-NNSA | Sep 2021 - Dec 2021

- Conducted a comprehensive survey on IIoT and SCADA attack incidents and vulnerabilities.
- Explored the relevance of machine learning solutions in cybersecurity.
- Developed procedures and identified datasets for implementing deep learning in attack detection for SCADA and IIoT systems.

Student Researcher — Raleigh, NC
Advisor: Arnav Jhala
North Carolina State University | May 2021 - Jul 2021

- Investigated the impact of color and saturation on human attention and memory in comic panels.
- Utilized gaze tracking software to automate data analysis and visualization processes.
- Designed and developed web pages using HTML, JavaScript, and CSS for remote experimental data collection.

Principal Investigator — Las Vegas, NV
Advisors: Brendan Morris, William Doyle, Jorge Fonseca
University of Nevada, Las Vegas | Jan 2021 - Dec 2021

- Employed Keras for data analysis and utilized open-source facial analysis toolkits for feature extraction.
- Developed scripts to extract frames from video data and preprocess relevant numerical features.
- Achieved a 96% classification accuracy for drowsiness detection models with a processing time of approximately 2 ms.

Student Researcher — Las Vegas, NV
Center for Accelerating Operational Efficiency | Jun 2019

- Collected data at airport checkpoints via time studies and passenger interviews
- Identified process efficiency improvements at Harry Reid International Airport using time studies and Arena models.
- Presented findings, Arena simulations, and recommendations for novel security protocols to McCarran associates, optimizing wait-time.

PUBLICATIONS AND PREPINTS

Domantay, J & Morris, B. (2022). How Facial Features Convey Attention In Stationary Environments. *Spectra Undergraduate Research Journal,* 2(2), 66-88.

Carbonero, A., Domantay, J., & Guthrie, K. (2022). The Optimization of Signed Trees. *The Australasian Journal of Combinatorics,* 84(1), 111-123.

RELEVANT SKILLS

Machine Learning, Adaptive Computing, Computer Vision
C, C++, C#, Python, Java, JavaScript, HTML, LaTex, SQL, R, MatLab
Tensorflow, Sci-kit, Entity, Kendo UI, ASP .NET MVC, JQuery, Tortoise SVN, Jupyter, Git

WORK EXPERIENCE

Software Engineer Las Vegas, NV
JCM Global | Jan 2022 - Aug 2022

- Leveraged .NET MVC application to visualize and manipulate business metrics for electronic gaming machine management
- Designed SQL schema and queries to facilitate data access for client applications and customization
- Debugged and designed features for Android application UI/API
- Administered stress tests to server environments to simulate casino data to identify and address issues with application functionality and memory consumption

AWARDS AND HONORS

Research and Creative Honors (2nd Place), 2021, UNLV
Undergraduate Research Stimulus Program, 2021, UNLV ($1,500)
Best Poster Award in Health & Natural Science & Engineering, 2021, UNLV
Devil's Invent: Hardening of Soft Targets Design Competition (2nd Place), 2021

RESEARCH PRESENTATIONS

National Renewable Energy Lab Intern Symposium. *Adaptive Computing: Optimizing energy without breaking the bank*, Poster presentation. Golden, CO. August 2023.
Honors College Thesis Defense. *How facial features convey attention in stationary environments,* PowerPoint presentation. Las Vegas, Nevada. November, 2021.
Fall Undergraduate Research Symposium of UNLV. *How facial features convey attention in stationary environments,* Podium presentation. Las Vegas, Nevada. November, 2021
Summer 2021 Undergraduate Research & Creativity Symposium. *Impact of Color Saturation on Gaze in Comic Panels*, Poster presentation. Raleigh, North Carolina. July, 2021. Copresented with: Koelsch J.
Fred and Harriet Cox Senior Design Competition. *Lief's Ascent,* PowerPoint presentation. Las Vegas, Nevada. May, 2021. Copresented with: Articulo R. W., Cabahit D., Cano L. A., McHenry-Kroetch L., & Yarmak L.
Spring Undergraduate Research Symposium of UNLV. *Modeling COVID-19 Infection Rates Using SIR and ARIMA Models*, Poster presentation. May, 2021. Las Vegas, Nevada. Copresented with: Taksheyev V. & Pivavaruk I. Best Poster Award
Honors College Thesis Proposal Defense. *How Facial Features and Head Gesture Convey Employee Attention in Stationary Work Environments,* PowerPoint presentation. Las Vegas, Nevada. April, 2021.
Devil's Invent: Hardening of Soft Targets. *Securivision,* PowerPoint presentation. Remote. March, 2021. Copresented with: Obata D. & Mann. Y.
Math For All Conference. *The Optimization of a Signed Tree,* Poster presentation. New Orleans, Louisiana. March, 2021. Copresented with: Guthrie K.

Fall Undergraduate Research Symposium of UNLV. *The Optimization of a Signed Tree,* Poster presentation. Las Vegas, Nevada. November, 2021. Copresented with: Guthrie K.