NICOLE TRAPPE

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Education

BS in Cognitive Neuroscience — Neuroscience   2022
University of California, San Diego

Research Experience

Research Associate for AI for Healthy Living at UC San Diego   2017-2018
- First-year undergraduate researcher included in the $10M IBM research grant
- Focused on gathering sensor data to measure cognitive function in the elderly
- Identified signs of cognitive decline and the most appropriate metrics
- Utilized non-invasive sensors and technology to measure health, daily habits, and social interaction
- Collaboration across Computer Science & Engineering, Cognitive Science, and UC San Diego Medical School

Machine Learning Intern at IBM   Summer 2019
- Implemented machine learning models to develop an artificial nose
- Studied the olfactory circuit of *Drosophila* to inspire these models
- Collected data from our "C-Eva" sensors which detect odorant concentrations
- Identified ideal environmental conditions to reduce large-scale drift in C-Eva
- Trained and tested supervised classifications models in Python

Student Researcher for Flap.JS at UC San Diego   2020-2021
- Devised a study to identify whether hypothesis-in-action or trial-and-error learning is more conducive to learning advanced topics
- Conducted screen recordings of user interactions with the Flap.JS tool to evaluate usability and design effectiveness
- Assessed the adequacy of signifiers to inform and feedback to confirm actions

Research Assistant at Operation Wallacea   Summer 2015
- Gathered biodiversity data in the field in the Cusco cloud rainforest and Tela coast (Honduras)
- Conducted measurements of tree diameters and spacing for carbon counting

- Aided coral reef restoration projects using cinder blocks
- Learned scanning and identification techniques for birds and amphibians
- Analyzed data from a variety of biomes to reach conclusions about population changes and responses to environmental forces

Manuscripts Under Review

- *Redefining History: An Afro-Centric Examination of the Decline of West African Empires - Ghana, Mali, and Songhai*
- *Marked by History: Scarification, Identity, and Transformation in the Pre- and Post-Colonial Eras*

Presentations

Applying Neuro-Inspired Models to Olfactory Data   2019
Internal IBM Almaden Research Presentation Series

Teaching & Mentoring

Computer Science & Engineering Tutor   Fall 2021
- Graded quizzes and assignments for a course on Software Engineering with a focus on web development and Agile principles
- Taught students how to use Git, asynchronous functions, HTML, CSS, JavaScript, dynamic design, the DOM, and how to debug webpages
- Led short sections in lecture on engineering patterns, accessibility, and website architecture

Mentor for EDGE   2020-2021
- EDGE is a program that encourages girls to enter STEM in high schools across San Diego
- Introduced girls in this program to Computer Science and what it's like
- Led a workshop with 5+ students to help them write their college applications

Professional Experience

Software Engineer at Microsoft   2023-Present
- Improving the developer experience for Windows Containers
- Developing, deploying, and validating container images and containers
- Standardizing and improving error messages with Docker relating to platform mismatches

Software Engineer Intern at Microsoft   Summer 2021

- Implemented an ACPI translation layer to be released in Windows
- Obtained latency and bandwidth data of different memory blocks from the BIOS
- Designed an API to expose these characteristics for devices with different needs
- Provided a testing framework for user- and kernel-mode validation
- Coded the translation layer, API, and tests in C/C++

Honors & Awards

Provost Honors   2018-2022
Awarded each quarter for a GPA higher than 3.5/4.0

Chancellor's Research Innovation Scholarship   2018
Granted this scholarship based on the work for Cognitive Decline in the Elderly

Winner of Hackxx   2018
Won the Women-Centric Hackathon with an app to teach girls math

National Advanced Placement Scholar   2017
Obtained title for scores on the Advanced Placement exams

Premio de Oro   2015
Received a Spanish Language Association Honor

Technical Skills

Programming — C/C++, React, Python, Javascript, HTML, CSS, Java

Tools — GitHub, Docker, Azure Kubernetes Service, Jupyter Notebook, MATLAB

Design/Docs — Keynote, Figma, PowerPoint, Word, Adobe Suite

Languages

English — Fluent   **Spanish** — Advanced   **Danish** — Basic

References

Federico Rossano   **Thomas A. Powell**   **Tajana Rosing**
Cognitive Science   Computer Science   Computer Science