RAYMOND JAVIER DUEÑAS
Curriculum Vitae

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EDUCATION

September 2023- Current **University of California San Diego**
Jacobs School of Engineering
Pursuing - Ph.D. Computer Science and Engineering

May 2023 **California State University Stanislaus**
College of Science
Dual Major B.S. Mathematics and Computer Science | GPA 3.945

Summer 2017 **Merced Community College**
Transfer Credit Program

Spring 2017 **Modesto Jr. College**
Transfer Credit Program

RESEARCH EXPERIENCE

June 2022 – May 2023 ***Summer REU Under Dr. Adham Atyabi, University of Colorado Colorado Spring's***

At the University of Colorado Colorado Spring's deep learning REU I researched autonomous flight and obstacle avoidance in drones utilizing deep learning, computer vision, and a monocular camera. Attempting to develop competitive autonomous flight utilizing optical flow, our work involved developing data sets, flight control algorithms utilizing deep learning and conducting multiple presentations.

Jan. 2022 – May 2023 ***Undergraduate Student Researcher Dr. Kyu Han Koh's Innovative Learning and Design Lablab,*** **California State University Stanislaus**

As a member of Dr. Koh's research lab, my current project utilizes computer vision to uniquely develop a climate data set to be analyzed and visualized. The intention is to develop a model that will make climate change predictions by employing machine learning on the developed data set in order to provide further evidence of climate change. The work was presented the CSU Stanislaus capstone conference in the Spring of 2023.

Fall Semester 2021 ***Undergraduate Student Researcher Under Dr. Yanhong Wu*, California State University Stanislaus**

In the Fall of 2021, I was sponsored by Dr. Yanhong Wu, who was very invested in his advising, meeting once a week and providing materials to increase my understanding of the software and methods utilized for conducting Operations Research and Sequential Data Analysis. Our research analyzed the weekly mortality rate of LA county from 1970 to 1979 due to circular vascular complications. We found two important results. First, we found a better model fitting by using the change-point model instead of the linear trend model by treating temperature and pollution in LA county as covariates, and the improvement was quite significant. Second, the time series analysis of the residuals shows that an autoregressive model dependent on the previous two observations provides a quite satisfactory fitting for the errors and can yield better predictions. All the computations were carried out in R. In the final report that I wrote for this project, we included the source code, access to data, and outputs for the duplicability of our methods.

HONORS & AWARDS

May. 2023 **CSU Stanislaus Department of Mathematics Outstanding Scholar Award**

Aug. 2022 **CSU – LSAMP PROUD Scholar – Outstanding Academic Performance**

Aug. 2022 **CSU – LSAMP PROUD Scholar – Outstanding Service**

Jan. 2022 – Present **McNair Scholar**

Aug. 2021 – Present **Cal-Bridge Scholar**

Jan. 2020 – Present **Louis Stokes Alliances for Minority Participation (LSAMP) Scholar**

Aug. 2020 – May 2022 **Math Club President**

Jan. 2019 – May 2023 **Deans List**

POSTER PRESENTATIONS

Dueñas Javier, Raymond. (2022) "Artificial Intelligence Capacity to Re-Phrase Complex Language—Increasing Interdisciplinary Comprehension" Capstone Conference, California State University Stanislaus, Zoom. (This was a research proposal poster presentation after further review the project was deemed out of scope for timeline and not executed)

Dueñas Javier, Raymond. (2023) “Climate Change Analysis and Datasets Derived Through Computer Vision” Capstone Conference, California State University Stanislaus.

UNDERGRADUATE COURSEWORK

Mathematics

- Trigonometry
- Calculus I
- Calculus II
- Probability and Statistics
- Discrete Structures
- Multivariate Calculus
- Intro to Differential Equation
- Linear Algebra
- Differential Equations
- Set Theory and Logic
- Theory of Numbers
- Real Analysis I
- Numerical Analysis
- Operations Research
- Abstract Algebra
- Complex Variables
- Probability Theory

Computer Science

- Computer Programming I
- Computer Programming II
- Intro to Bus Computer Systems
- Assembly Lang & Comp Architecture
- Communication Networks
- Data Structures and Algorithms
- Computer Organization
- Operating Systems I
- Programming Languages
- Automata Comp & Formal Lang
- Theory of Algorithms
- Software Engineering
- Cybersecurity Fundamentals
- Seminar in Computer Science