



# Thesis Defense

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Computer Science Master's Program

## **“Exploring Gender Disparities in Collaboration Networks: An Analysis of h-Indices and Collaborator Proximity”**

**By Andrew Estrada**

### **Abstract:**

Research is crucial for expanding the boundaries of what is known, driving innovation, and solving problems faced by communities. It is carried out across all sectors of society by all matter of institutions. Academic research is one such sector that contributes to a plethora of disciplines. Research often compels collaboration among researchers, and as with any team, the dynamics and outcomes are affected by the individuals who contribute to the research. For instance, researchers can be from different institutions; therefore research teams can differ in collaboration distance – the geographic distance between the organizations of authors. In a similar vein, facets of individual researchers may impact their collaboration patterns. Two such known sources of difference are gender and an author's measured impact.

This thesis investigates differences in geographic collaboration distance and correlations between impact and network metrics based on the inferred gender of authors from the California Public University system. In particular, this thesis uses publication data primarily from the area of computing with contributions from authors of California Polytechnic State University, San Luis Obispo and University of California schools. From this data, two collaboration networks are constructed with one used to calculate two measurements of collaboration distance for each author – distance of individual collaborations and reach of collaborations over time – and the other to calculate network metrics by author impact.

This thesis provides evidence suggesting a differences in collaboration distance over time and network metrics of inferred female and male authors. These differences tend to favor male authors.

**Date: Friday, June 7<sup>th</sup>, 2024**

**Time: 2:00 PM – 4:00 PM**

**Location: 14-232b**

**Committee: Dr. Migler, Dr. Rwebangira, and Dr. Wood**

