Daniel Paul-Pena

San Francisco Bay Area — October 2024

daniel-paul.github.io
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Research Interests	Theoretical Computer Science, Subgraph Counting, Fine-grained complexity

Education

University of California, Santa Cruz	09/2021 – 06/2026 (Expected)

Ph.D. Candidate in Computer Science and Engineering
Advisor: C. Seshadhri

University of Southern California	08/2018 – 05/2020

M.S. in Computer Science

University of Malaga	09/2016 – 07/2017

M.S. in Software Engineering and Artificial Intelligence

University of Malaga	09/2012 – 08/2016

B.S. in Industrial Engineering

Work Experience

Amazon, Science	06/2023 – 12/2023

Applied Scientist Intern

Amazon, Kindle	05/2020 – 06/2021

Software Developer Engineer

Amazon, Kindle	05/2019 – 08/2019

Software Developer Engineer Intern

Acheron Capital Ltd.	09/2017 – 05/2018

IT & Database Analyst

Publications

Google Scholar

Preprints

1. Subgraph Counting in Subquadratic Time for Bounded Degeneracy Graphs
   Daniel Paul-Pena, C. Seshadhri
   In Submission, 2024

Conference Papers

2. A Dichotomy Hierarchy Characterizing Linear Time Subgraph Counting in Bounded Degeneracy Graphs
   Daniel Paul-Pena, C. Seshadhri
   To appear in SODA, 2025

3. A Dichotomy Theorem for Linear Time Homomorphism Orbit Counting in Bounded Degeneracy Graphs
   Daniel Paul-Pena, C. Seshadhri
   To appear in ISAAC, 2024

4. Covering a Graph with Dense Subgraph Families, via Triangle-Rich Sets
   Sabyasachi Basu, **Daniel Paul-Pena**, Kun Qian, C. Seshadhri, Edward W Huang, Karthik Subbian
   To appear in CIKM, 2024

JOURNAL PAPERS

5. [Predicting >10 MeV SEP Events from Solar Flare and Radio Burst Data](#)
    Marlon Núñez, **Daniel Paul-Pena**
    Universe, 2020

AWARDS		
Post-advancement Fellowship, UC Santa Cruz	2024
Regents Fellowship, UC Santa Cruz	2021
Department Fellowship, UC Santa Cruz	2021
Honors Certificate, University of Southern California,	2020
Fulbright Scholarship	2018

INVITED TALKS		
Poster: A Dichotomy Hierarchy Characterizing Linear Time Subgraph Counting. *TOCA-SV*	2023
Homomorphism Orbit Counting in Bounded Degeneracy Graphs. *TOCA-SV*	2022

SERVICE

Reviewer: STACS 2024, ISAAC 2024
Volunteer: FOCS 2023

TEACHING EXPERIENCE	
Teaching Assistant for CSE 105/209A: Modern Algorithmic Toolbox, UC Santa Cruz	SPRING 2023
Teaching Assistant for CSE 201: Analysis of Algorithms, UC Santa Cruz	WINTER 2022
Teaching Assistant for CSCI 270: Introduction to Algorithms and Theory of Computing, University of Southern California	SPRING 2020