

# ADRIAN S ROMAN

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## EDUCATION

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**University of California Davis** 2016 - 2021

Bachelor of Science in Computer Science, GPA: 3.3

Bachelor of Science in Mathematics, GPA: 3.3

**Stanford University** Jun - Aug 2018

Intensive Studies in Data Science Certificate, GPA: 3.3

## RELEVANT COURSEWORK

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**Stanford University** *Graduate-Level Courses* Jun - Aug 2018

- Statistical Learning: supervised and unsupervised algorithms for predictive and descriptive learning.
- Data Mining: implementation of data mining tools for developing useful and actionable data.

**University of California Davis** *Upper Division Courses* 2016 - 2021

- Recommender Systems: collaborative filtering and content-based selection methods.
- Operating Systems: study of operating systems and system programming.
- Data Structures & Algorithms: analysis and design of data structures using C++.

## EXPERIENCE

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**Software Development Intern - Oscilloscope, LLC** Jun 2019 - Present

- Lead developer of an innovative iOS mobile app to provide a therapy for language pathologies.
- Designed an AI algorithm to synchronize a metronome with a user's spontaneous tapping rate.
- The mobile app provides a rhythmic therapy to train synchronization in lieu of rhythmic interactions with human therapists.

**Curriculum Creator - Computer Science for Kids (CS4K)** Sep 2019 - Present

- Design lecture materials for teaching basic programming concepts, game programming, and debugging.

## RESEARCH

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**Dynamical Model of Interpersonal Synchronization & Endogenous Rhythms** 2018 - 2019

- Designed a network of non-linear oscillators to model how matching or mismatching spontaneous tapping rates affect synchronization between individuals in a musical task.
- Performed physical modeling with ODEs and applied Fourier analysis to design the network.
- Wrote AI algorithms in Python to model adaptive synchronization between oscillators.

**Search Engine to Determine Relevance of Documents** Aug 2018

- Implemented AI algorithms that return documents from users' search queries in order of relevance.
- Identified and extracted relevant features from a large dataset to enhance the accuracy of algorithms.

## PROGRAMMING PROFICIENCIES

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C++ C Python Matlab Swift Objective-C TensorFlow Core-ML UNIX JSON L<sup>A</sup>T<sub>E</sub>X

## CONFERENCE PRESENTATIONS

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**Spoken presentation - Society for Music Perception and Cognition (SMPC)** Aug 2019

- **Roman, A. S.**, Roman, I. R. (2019). Individual Musician's Spontaneous Performance Rates Affect Interpersonal Synchronization in Joint Musical Performance: A Dynamical Systems Approach.

## AWARDS

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**Undergraduate Travel Award at UC Davis** May 2019

- Funding to travel and present research at SMPC conference held in New York University.