Santi Santichaivekin

jsantichaivekin@hmc.edu • github.com/ssantichaivekin • (+66)89-449-7044

Education

Harvey Mudd College Claremont, CA
B.S. in Computer Science, GPA 3.81 *Class of 2022*

Coursework

Advanced Topics in Algorithms; Complexity Theory; Machine Learning and Search; Digital Electronics; Science of Debugging; Computer Systems; Software Development; Phylogenic Tree Reconstruction; Multivariable Calculus; Differential Equations; Linear Algebra

Skills

Proficient: Python | Knowledgeable: Go, Java, C++, C, C#, JavaScript, React, Bash, Prolog, System Verilog, debugging with recordings, distributed systems

Experience

Research Assistant, *Harvey Mudd College*, Claremont, CA Summer 2020

- Managed a team of six under professor supervision to develop Empress—a Python application that helps biologists understand how different species lived together in the past. (github.com/ssantichaivekin/empress)
- Made key design and style decisions, managed GitHub issues, led rigorous code review processes.
- Created a pipeline for testing, freezing, and packaging the application using Pyinstaller and Github Actions.
- Held Zoom information sessions on Git, GitHub, text editors and integrated development environments, Python best practices, and Python debugging tools for rising sophomores in the team.

CS Tutor/Grader, *Harvey Mudd College*, Claremont, CA Spring 2018 - Fall 2020

- Tutored and graded Advanced Algorithms class which covers randomized algorithms, approximation algorithms, competitive algorithms, duality, matroid theory, advanced data structures and analysis.
- Tutored and graded Computability and Logic class which covers proof methods, automata, Prolog, and computability theory. Wrote autograder for Prolog using Python subprocess module and Swipl compiler.
- Tutored and graded CS For Insight class which focused on using Python libraries for everyday tasks such as file management, web-scraping, machine learning, and HTML generation.

Software Engineer Intern, *Uber ATG*, San Francisco, CA Summer 2019

- Implemented an algorithm to help reduce the number of latitude-longitude waypoints in routing engine for self-driving cars. Used Java.
- Developed metrics for measuring the consistency of self-driving car constraints such as "do not take unprotected left turn" and "do not enter school area" among different services in Uber's self-driving platform. Used Go.

Software Engineer Intern, *Microsoft*, Bellevue, WA Summer 2018

- Implemented an event queue which performs layout calculations in the background across multiple frames to make complex visual transitions in Microsoft Whiteboard application more responsive. Used C#.

Publications

Santichaivekin, S., Yang, Q., Liu, J., Mawhorher, R., Jiang, J., Wesley, T., Wu, Y., & Libeskind-Hadas, R. *eMPRess: A Systematic Cophylogeny Reconciliation Tool*. Accepted for publication on Bioinformatics.

Santichaivekin, S., Mawhorter, R., & Libeskind-Hadas, R. *An efficient exact algorithm for computing all pairwise distances between reconciliations in the duplication-transfer-loss model.* BMC Bioinformatics 20, 636 (2019).

Personal Projects

Halite3 AI Competition Bot (github.com/ssantichaivekin/halite3) Fall 2018

- Wrote evaluation functions to navigate ships around the game map and collect resources without colliding. Used Python and switched to C++ for performance.
- Used Evolutionary Algorithm in Python to fine-tune hyperparameters on DigitalOcean server.
- Finished with rank 201 out of 4014 total participants.

Honors and Awards

5th place in ACM-ICPC Contest SoCal Region, 2018
5th place in ACM-ICPC Contest SoCal Region, 2017
1st place in Harvey Mudd College Microsoft Coding Competition, 2017