Ashley D'Souza

■ akd6@rice.edu ■ 512-228-4140
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Education

Rice University
2017 - present
Houston, TX
- BS Computer Science, graduating May 2021, GPA: 3.41

Westwood High School
2013 - 2017
Austin, TX
- GPA: 4.0/4.0 (5.58/5.0 weighted), National Merit Scholar, Graduated May 2017

Work Experience

OpenStax   *Backend Engineering Intern*
Summer 2019
Houston, TX
- Convert Biglearn to highly scalable application by developing testing and deployment automation
- Work in team of interns to plan, pitch and build note-taking application integrated with OpenStax

Rice University, Dept. of Computer Science   *Teaching Assistant*
2019 - present
Houston, TX
- COMP 382 Reasoning about Algos: Office hours, lead discussion of lab problems, homeworks

UT Austin, College of Natural Sciences, Vertebrate Interactome Lab   *Summer Research Intern*
2016
Austin, TX
- DNA recombineering of DHX35 gene in E. coli, and computational Flux Balance Analysis on cyanobacteria

Awards

Rewriting the Code Fellowship   *Fellow*   [more](#)
2019 - present
US/Canada
- Coaching, educational programming, industry exploration, and networking for females in CS

PyoFuel: Using Python and Pathway Tools to engineer synthetic biofuel   *Sole Author*   [more](#)
Dec 2016
Colorado
- Int'l. Soc. for Computational Biology / 2016 Rocky Mountain Bioinformatics Conference (poster session)

Software Development Skills

Programming Languages & Frameworks
2013 - present
- Proficient: Python, Java, C, Ruby, RoR, Git, Linux, AWS, ReasonML/OCaml, React
- Basic: Elm, Racket, Pyret, Html, Hasura's Postgres + GraphQL

Software Design and Test
2013 - present
- Systematic Program Design - Designing Data & Functions, EdX course based on HtDP2
- Typed functional programming (Java 8+, Python 3.5+, ReasonML/OCaml), Object-Oriented Design
- Test-driven development, unit & property-based tests, Pytest, JUnit 5 & QuickTheories, RSpec

Projects

Lentil - A Web-Based Musician's Feedback Service   *Independent Project*   [repo](#)   [demo](#)
2018 - present
- Musicians submit performances and receive pointed feedback from others (ReasonML, React, Postgres)

Physics Sunset   *Independent Project*   [repo](#)   [demo](#)
2017
- Design and implement a browser-based interactive graphical simulation of a physics problem (ReasonML)

Disease Transmission Analysis from Outbreak Data
2018
- Infer disease transmission tree from disease outbreak genetic + epidemiological data using RDMST (Python)

DNA Sequence Alignment
2018
- Design and implement dynamic programming solutions to DNA sequence alignment problems (Python)
- Align human and fruit-fly protein sequences to identify the PAX domain within the "eyeless" gene

Phylogenetic (Evolutionary) Trees
2018
- Infer evolutionary tree, given DNA sequences for leaf taxa and plausible mutations (Python)

Hidden Markov Models and Part-of-Speech Tagging (NLP)
2018
- Implement statistical learning of HMM using training corpus of pre-tagged sentences (Python)
- Implement Viterbi algorithm to assign part-of-speech tags to new sentences using trained HMM

Organizations and Activities

- CSters: Women in Computer Science, Rice University   2017 - present
- CS Club, Rice University   2017 - present
- Society of Women Engineers (SWE), Rice University   2017 - present
- SASE: Society of Asian Scientists and Engineers, Rice University   2017 - present
- Club Tennis, Rice University   2017 - present
- Music: sing, record, perform, take lessons   [soundcloud](#)   [youtube](#)   2007 - present
- PyLadies: Austin community of women Python programmers, team programming, presentations   2015 - 2017