Ashley D'Souza

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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 Algorithms: Office hours, lead discussion of labs, 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
- US/Canada-wide competitive award for females in CS: coaching, networking educational programming

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 Testing 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
- Databases and distributed systems - 'Designing Data-Intensive Applications', book by Martin Kleppmann

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)

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

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 DP solutions to DNA sequence alignment problems (Python)

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

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