

Joshua Engels

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EDUCATION

Rice University | Houston, Texas

August 2018 - May 2022

Bachelor of Science in Computer Science

Bachelor of Arts in Mathematics

GPA (unweighted): 4.0 out of 4.0

WORK EXPERIENCE

Two Sigma | New York, New York

May 2020 - August 2020

Software Engineering Intern—Time Series Storage Team

- Designed and built Baikal, a Java proof-of-concept high-frequency/high-throughput time series data store
- Hosted Baikal's gRPC metadata service and Apache Arrow data service on Kubernetes
- Optimized Baikal's merged read operation, bringing 100 MB throughput from 10 minutes to 10 seconds

John Deere | Des Moines, Iowa

May 2019 - August 2019

Software Engineering Intern—Advanced Analytics Team

- Built a Python framework for ingesting metadata onto AWS and performing automated tasks on that data
- Used the framework to reclaim infrequently used application licenses, saving Deere \$65,000 per year

RESEARCH EXPERIENCE

Simulated Voting | Rice University

January 2019 - Present

- Modeled paper ballot voting using ACT-R (a cognitive architecture) and Lisp
- Analyzed resulting error rates across the voting strategy space in R to identify ballot deficiencies
- First author of *Missed One! How Ballot Layout and Visual Task Strategy Can Interact to Produce Voting Errors*

Airborne Target Interception | Johns Hopkins Applied Physics Laboratory

June 2017 - August 2017

Engineering Intern—ASPIRE Program

- Implemented a computer vision algorithm to track airborne targets using real-time camera data
- Programmed a predictive model (a Kalman filter) in MATLAB to track target and project its future path

PROJECT AND TEACHING EXPERIENCE

Rice Comp 182 (Algorithmic Thinking) Teaching Assistant:

2020

- Held weekly office hours, led review sessions, and graded exams and projects for Rice's algorithms and discrete mathematics intro class

Hackathons:

2019

- At HackRice, built WikiLearn, a Chrome extension that shows the Wikipedia entry for any highlighted words on any webpage in a tooltip containing a fully functional Wikipedia browser
- At HackGT, built DevHealth, an Electron app that corrects posture with a TensorFlow PoseNet model

Rice Catalyst Eureka Program:

2018 - 2019

- Mentored a student in a year-long program aimed to introduce high schoolers to research
- Guided student through writing a Python program to web scrape and analyze historical song data

AWARDS

- Louis J. Walsh Scholarship in Engineering, 2020-2021
- Top 0.16% of ~1 million solvers on ProjectEuler.net (mathematical programming challenges), 2020
- First place underclassman in Rice coding competition, 2018 and 2019
- National Merit Finalist and Scholarship awardee, 2018