

Hwei-Shin Harriman

EDUCATION

Olin College of Engineering, Needham, MA

Candidate for Bachelor of Science in Computer Engineering. Graduation date: December, 2021

- Recipient of 4-year, 50% Olin Merit Scholarship

Self-Directed Learning, Coursera

- Introduction to Self-Driving Cars

EXPERIENCE

Tesla Motors

Full Stack Software Engineering Intern — September, 2020 to December, 2020

Created Plotly Dash web app to analyze CAN message trends, regressions on Tesla vehicles

- Created robust, parallelized work queue with Go, processes 2TB of raw data/day
- Set up HDFS database in AWS S3, configured schema structure
- Designed SQL queries to efficiently query data from AWS S3 using AWS Athena
- Created Airflow DAG to cache query results on an hourly basis
- Designed data visualization web app for optimized load times and in-depth data analysis
- Defined UI assets to standardize design across internal Tesla Engineering Fleet dashboards
- Documented approach, architecture, design decisions for ease of knowledge transfer; created Jupyter Notebook for new users to learn/explore query process, visualize query results

Tableau Software

Full Stack Software Engineering Intern — May, 2020 to August, 2020

Contributed to initial implementation of AutoSave for Tableau's browser-based editor

- Created UI draft indicators with React; components are shared by multiple teams
- Created actions, sagas, reducers, and requests to asynchronously fetch or discard drafts, re-render relevant components with draft indicators efficiently
- Collaborated with external teams and designers
- Used Node.js to mock server behavior for rapid testing
- UI/UX: React/Redux, Typescript, REST API. Backend: Java, Spring, PostgreSQL. Unit/integration tests: Enzyme, Sinon, Webdriver, Chai. Version control: Git

Full Stack Software Engineering Intern — May, 2019 to August, 2019

Built 'Go to Sheet' action in Tableau's browser-based editor

- Created dialog where user can create or edit an action
- Created endpoints and backend logic to fetch, make, discard actions
- UI/UX: Typescript, React. Backend: C++, existing Tableau API. Unit tests: Jasmine, CPPUNIT
Version Control: Git, Perforce

Penrose (Carnegie Mellon University)

Computer Science Research Intern — May, 2021 to present

Contributed to open source project, [Penrose](#), to generate diagrammatic high school geometry problems from a text prompt using program mutation

- Designed to be extensible to multiple math domains, easy to use for non-programmers
- Tools used: Typescript/React, Git, Penrose, LaTeX

PUBLICATIONS

Clew3D: Automated Generation of O&M Instructions Using

LIDAR-Equipped Smartphones

- Extended abstract accepted to ACM ASSETS '21 conference for demo/poster track

PROJECTS

Ambient Air Quality Data Analysis in Revere, MA — April, 2021

- Used Python to clean, analyze, and visualize ambient air quality data from sensor boxes
- Visualizations used by local government to inform their strategic plan to improve air quality

Swiss Poster Generator — March, 2020

hsharriman.github.io/design/swiss.html

- Designed website that generates posters in the style of Swiss Modernism using JavaScript

LDA Research Buddy with Pytorch — December, 2019

- Used topic modeling ML algorithms and web scraping to dynamically suggest similar topics for a given search term
- Automatically generated word clouds to visualize the relevance of each suggested topic

CONTACT

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TOOLS

SOFTWARE

Python
Go
Typescript / Javascript
React / Redux
Docker / AWS / Airflow
Presto / SQL
Java
C / C++ / Arduino C / gdb
Git / Perforce
Linux Bash / Terminal
HTML / CSS
LaTeX
Photoshop / Illustrator /
InDesign

INDUSTRY TOOLS

REST API
Jira / TFS / Confluence
Code reviews
Version control
Unit / integration testing

INTERESTS

SOFTWARE

Autonomous vehicles
Machine learning
Full stack engineering
Data visualization

OTHER

Ballerina with Dutch
National Ballet, 2017.
Presently with Harvard
Ballet Co

Communications Design
Student at Parsons the New
School, Spring 2020

Team Leader for Student
Volunteer Program at
SIGGRAPH 2018 and 2019

Member of Olin College's
Club Ultimate Frisbee Team

Disney Imagineering 2020
Semi-Finalist