

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

EXPERIENCE

Tesla

Full Stack Software Engineering Intern — September, 2020 to present

Creating Plotly Dash web app end-to-end, analyze regressions in CAN messages on Tesla vehicles

- Created robust, parallelized work queue, processes 2TB of raw data/day, stores as Parquet in S3
- Set up HDFS database in AWS S3, configured schema structure
- Uses HTTP requests to query internal databases for metadata
- Designing SQL queries to efficiently query data for front end
- Creating Airflow DAG to cache query results for front end on hourly basis
- Designing front end structure to optimize load times, consider wide variety of use-cases, allow for in-depth data analysis
- Defining UI assets to standardize design across internal Tesla Engineering dashboards
- Documenting approach, architecture, design decisions for ease of knowledge transfer; creating Jupyter Notebook for new users to learn/explore query process, visualize their own query results using Plotly

Tableau

Full Stack Software Engineering Intern — May, 2020 to August, 2019

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

- Created UI draft indicators with React; components are shared by multiple teams
- Creating actions, sagas, reducers, and requests to asynchronously fetch or discard drafts, re-render relevant components with draft indicators efficiently
- Collaborating 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

PROJECTS

LDA Research Buddy with Pytorch — December, 2019

[hsharriman.github.io/lda.html](https://github.com/hsharriman/lda.html)

- 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
- Analyzed inherent bias of the program

Neural Network Implementation with Numpy — December, 2018

[hsharriman.github.io/mnist.html](https://github.com/hsharriman/mnist.html)

- Used Python, Numpy to create feedforward and convolutional neural networks, trained on MNIST set of hand-written digits
- Networks included dataset pre-processing, batch, epoch, incremental testing, saving and loading checkpoints capabilities

Facial Recognition with Linear Algebra, Bayesian — March, 2018

[hsharriman.github.io/faces.html](https://github.com/hsharriman/faces.html)

- Programmed two facial recognition algorithms (Eigenfaces, Bayesian) in MATLAB. Tested on dataset of classmates faces' with 90% accuracy

Swiss Poster Generator with Javascript — March, 2020

[hsharriman.github.io/swiss.html](https://github.com/hsharriman/swiss.html)

- Designed website that generates posters in the style of Swiss Modernism using Javascript and HTML/CSS

CONTACT

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[hsharriman.github.io](https://github.com/hsharriman)

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

RestAPI
Scrum framework
Jira / TFS / Confluence
Code reviews
Version control
Unit / integration testing

INTERESTS

SOFTWARE

Autonomous vehicles
Machine learning
Full stack engineering
Data visualization
Computer graphics

OTHER

Ex-professional ballerina with Dutch National Ballet, presently with Harvard Ballet Co.
Student Researcher at Return Design Lab
Visiting student with Communications Design Department at Parsons the New School for Design
2-time SIGGRAPH conference Team Leader for Student Volunteer Program
Member of Olin College's Club Ultimate Frisbee Team
Disney Imagineering 2020 Semi-Finalist