

# SIDDHARTH SHRIDHAR DIWAN

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## Education

**Brown University** | Sc.B. in Computer Science, A.B. in Astronomy | GPA: 4.0/4.0 Graduating May 2024

◇ **Relevant Coursework:** Software Engineering, Computer Systems, Deep Learning, Honors Linear Algebra, Discrete Structures and Probability, Intermediate Calculus, Statistical Inference

## Experience

**Brown PLT** | Pyret Language Developer | Providence, RI Nov 2020 – July 2021

◇ Implemented the **Pyret Date-Time Library** by introducing **new datatypes** supporting the representation and manipulation of durations and calendar-times such as `Duration`, `ZoneOffset`, `ZoneId`, `UtcDateTime` and `OffsetDateTime`

◇ **Documenting** the new Date-Time library using **Racket Scribble**

**Indian School of Business** | DIRI Team | Data Science Intern | Hyderabad, India Oct 2020 – March 2021

◇ Designed and built an **interactive dashboard** with **Plotly**, **Dash** and **Heroku** to visualize trends in 'Privacy' labelled tweets

◇ Utilized techniques such as **web-scraping**, **multiprocessing**, **task scheduling** and **Named Entity Recognition** to classify tweets based on sentiment, retweets, favorites, hashtags and organization references

## Leadership

**Undergraduate Teaching Assistant** | Software Engineering CSCI 0320 Fall 2021, Spring 2022

◇ Hosting weekly TA hours for **60+ students**, mentoring 9 groups and 9 individual students through weekly check-ins

◇ Developed **Dijkstra**, **A\*** and **LPA\*** lecture content and **Java** assignments

◇ Built traffic and street intersection servers in **Python** to provide students with **real-time data** for their pathfinding projects

**Flight Software Co-Lead** | Brown Space Engineering Winter 2021 - Present

◇ Co-leading the flight software subgroup of **30+ members** in developing **FreeRTOS modules** for the PVDX **cube satellite** approved for launch in 2024 by **NASA**

◇ Producing material and delivering lectures on the EQUiSat cube satellite's **embedded C** multi-threaded **Camera Driver** and **UFH Radio Transmitter** modules

## Projects

**Schwarzschild Ray Tracing** [[sidwan02/schwarzschild-ray-tracing-app](https://github.com/sidwan02/schwarzschild-ray-tracing-app)] Dec 2020 - Present

◇ Performed Schwarzschild Ray Tracing using the **Python differential equation solver library** and **elliptic integral library**

◇ Hosted an **API** using **Django** that takes in a light source position and initial ray direction, and returns a **dynamic recursive sampling** of ray trajectory points

◇ Developed a **React Native** application (in open testing on the **Play Store**) that allows users to trace rays in **2D/3D space**

**Journal Texter** [[sidwan02/journal-texter](https://github.com/sidwan02/journal-texter)] Spring 2021

◇ Built a **web-app** with **Maven**, **SQL** and **Heroku** that records and organizes user journal entries

◇ Developed a **word count vectorization** algorithm in **Java** to extract terms from entries and a **sentiment analysis** model using **PyTorch** to attach **contextual sentiment** to those terms for **recommending** successive entry topics

## Research

**Self-Supervised Segmentation for Hand Disambiguation** | Researcher June 2021 – Present

◇ Analyzing varying **image flow** implementations of the **RAFT** algorithm with Professor Srinath Sridhar in the **Interactive 3D Vision & Learning Lab** at **Brown Visual Computing**

◇ Developing an optimal **Motion Grouping** model that disambiguates left and right hands within **procedural frames** of culinary videos

## Skills

◇ Self-learning: Udemy, Coursera, MIT OCW, edX

◇ Languages & Technologies: Python, Java, React Native, JavaScript, PyTorch, TensorFlow, C, Go, SQL, x86-64, Racket

◇ Interests: Public Speaking, Debate, Rocketry, Badminton, Synthwave, Chiptune