

RISHIKESH BALAJI

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PROFESSIONAL EXPERIENCE

Wave Computing

Software Engineering Intern (Machine Learning)

📅 May 2019 – Aug 2019

📍 Campbell, California

- Designed and implemented multiple convolutional neural networks for image detection and semantic segmentation.
- Constructed and optimized a single-shot image detector for use in retail stores to acquire and analyze product data through security camera footage
- Developed mask prediction model for dense object detection and semantic segmentation to process surroundings for autonomous vehicles, increasing accuracy by 20% while decreasing computational cost
- Constructed a web application to visualize incoming data streams for customers in an easy and accurate fashion leveraging Matplotlib and Tableau

Imagination Technologies

Software Engineering Intern

📅 May 2017 – Aug 2017

📍 Santa Clara, California

- Collaborated with lead software engineer in developing Voice over IP software and cloud computing applications while utilizing technologies such as Python, HTML5, CSS, and JavaScript
- Developed a MySQL database system with a Python Flask interface to manage back-end testing data while also organizing incoming data

RESEARCH EXPERIENCE

University of Illinois: Computer Vision Group

📅 Aug 2019 – Present

📍 Champaign, Illinois

- Engineering a convolutional neural network to analyze human-object interactions on a given image, by examining various interactions between unique human poses and object types, using Python, Pytorch, and the HICO-DET Dataset
- Researching under Professor Derek Hoiem to optimize existing models by adding convolutional layers and various feature transformers to detect human-object interactions

University of Illinois: SRTI Labs

📅 Sept 2019 – Dec 2019

📍 Champaign, Illinois

- Developed algorithm using OpenCV and Amazon Kinesis to extract features from video streams to identify vehicle traffic across campus
- Drove and project managed a team in building a full-stack web application to display university traffic analytics using Python and JavaScript
- Generated data from custom Raspberry Pi units and cameras across campus to improve vehicle productivity

EDUCATION

University of Illinois at Urbana-Champaign

B.S.in Computer Science and Mathematics

📅 Fall 2018 – Spring 2022

SKILLS

- Java, Python, C++, C, JavaScript
- Kubernetes (K8s), Docker, React.js, Node.js, MIPS, Shell, Unix, Tableau
- Pytorch, Tensorflow, Caffe, Keras

RELEVANT COURSES

Discrete Structures, Discrete Mathematics, Linear Algebra, Data Structures, Computer Architecture, Data Mining, Machine Learning, Algorithms and Models of Computation, Numerical Methods

PROJECTS

Algorithmic Wealth Management App

- Constructed a wealth management app that used stock data and machine learning algorithms to help people intelligently invest money
- Designed backend to pull all current stock data from the IEX Trading API and compute the most profitable investments given the user's data
- Devised an haptic frontend deploying Java that displays all of the user's data in a simple and discernible manner

Reddit Word Visualizer

- Created an openFrameworks application in C++ that examined and modeled the frequency of words within Reddit to better visualize language trends within various forums.
- Designed fluid backend that extracted and filtered dynamic data from the Reddit API.
- Built an interactive frontend that creatively displayed data

Easy Week

- Built a schedule optimizer that allows UIUC students to effectively construct class schedules for their major based on standing, general-education requirements, interests and more
- Designed an interactive React.js front-end and backend to scrape data from the official university course API