SHASHWAT KAPOOR
STUDENT

CONTACT

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PORTFOLIO

Github_/RaXephon

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SKILLS

Languages

- Python
- C/C++
- Java
- Scala
- OCaml
- Ruby

Frameworks/Tech

- Node.js
- AWS
- Heroku
- PySpark
- Hadoop
- Tensorflow

BackEnd

- Python
- JavaScript
- PHP

FrontEnd

- HTML5/CSS
- Dash Plotly
- React.js

Databases

- SQLite
- MySQL
- MongoDB
- AWS RDS

Computational Analysis

- R
- SAS

Very familiar with **C**, **Python**, **Java** and **Node.js**.

Strong **collaboration, problem solving** and **critical thinking** skills.

PUBLICATIONS

- Agrawal, S, T Lin, S Kapoor, T Balachander, M Konduri, and B Carlisle (2018). MultiSeg: Multiple-Instance Video Object Segmentation with Unsupervised Instance Tracking. Working Paper; available upon request.

LANGUAGES

Hindi > native
English > fluent

EDUCATION

#University of Maryland, College Park, MD
B.S. in Computer Science & a minor in Statistics — Gradution: May 2020

Selected Coursework: Computer and Network Security, Intro to Data Science, Machine Learning, Algorithms, Artificial Intelligence, Bioinformatics, Data Structures, Big Data Analytics with Spark

WORK EXPERIENCE

#Software Engineering Intern — Jun 2019 > Present
@ Fraunhofer CESE
- Designed an ETL workflow for real time data processing (currently >1 million records) using AWS and PySpark on in-house Spark buckets.
- Developed a comprehensive web based user dashboard for data visualization and predictive analysis using Dash.
- Implementing a deep discriminative autoencoder architecture for feature extraction from contracted party's S3 image buckets.

#Research Assistant — Aug 2018 > Present
@ Tiwary Group, University of Maryland
- Developed mathematical models using Monte Carlo techniques to study molecular interactions between protein folds and other biochemical events.
- Conducting computational research on modeling the interplay between thermodynamics and dynamics in complex real-world systems, relevant to material sciences.

#Head of Logistics — Jun 2018 > Sep 2018
@ RealityHacks
- Successfully managed the schedule and mini-events like workshops, talks, etc.
- Monitored external services required for the success of the hackathon.
- Supervised and evaluated a team of logistics officers.

#Research Assistant — Jan 2018 > Jun 2018
@ Cognitive Neuroscience of Language Lab, University of Maryland
- Performed data mining and data manipulation using pandas, numpy and pyaudio.
- Provided consistent, high quality logistic support to researchers for successful experiements.
- Assisted with setting up and conducting experiments (usually EEG tests).

PROJECTS (Available on GitHub)

#BRAIN Project- Group Project — Aug 2019 > Present
- Worked on synthesizing images by applying transformation functions to images from publicly available datasets using opencv and numpy.
- Preparing a COCO-like dataset architecture for object detection from the synthesized images and storing them in a AWS S3 bucket.
- Developing a convolutional neural net for brain hemorrhage detection in CT scan slices using tensorflow and keras; training on AWS EC2.

#Twitter Analytics - Personal Project — July 2019 > Sep 2019
- Set up a data pipeline in java to collate real time tweet data from twitter4J library and implemented basic filtering.
- Developing a MapReduce job for analyzing and interpreting retweet behavior to predict trending topics in the future.

#Ising 1D & 2D Model - Tiwary Lab — Jan 2019
- Ising model is a mathematical model in Statistical Mechanics and is primarily used to show phase transitions (eg. liquid state to solid state).
- Implemented Monte Carlo techniques to simulate the Ising 1D & 2D models in a closed system using pandas, numpy, and pillow.
- Currently working on a convolutional neural net to simulate the 2D Ising model in an open system with unsupervised outside variables.

#Scribr - Medhacks — Sep 2018
- Architected an app that aims to reduce doctor stress and make more efficient use of time by providing automated scribing services using node.js .and HTML/CSS.
- Implemented natural language processing techniques and heuristics designed to translate doctors' words into completed medical data sheets.

#PlannrBot - HopHacks (2nd Runner-up) — Feb 2018
- Launched a web speech recognition chatbot that converses with the user to help create an itinerary for their upcoming trip using natural language processing.
- Made with node.js, python, PHP, spacy (for natural language processing), Google's Speech & Places API and Yahoo!'s Weather API.