

Paahuni Khandelwal

EDUCATION

Colorado State University, Fort Collins, CO, Ph.D in Computer Science	Jan 2020 - Present, GPA 3.9
Colorado State University, Fort Collins, CO, MS in Computer Science	Aug 2017 - Present. GPA 3.8
Miranda House, University of Delhi, India, B.Tech in Computer Science	July 2013 - May 2017. GPA 3.6

SKILLS

- **Programming Languages** - Python, Java, GoLang, C++, Scala, R, Shell Scripting, MATLAB, SQL, HTML, JavaScript
- Operating Systems - Linux/Unix, Windows, MacOS
- **Tools** - Hadoop (MapReduce, Yarn and HDFS), Apache (Spark & Storm), Horovod, Scikit-learn, Zookeeper, Rstudio, Tensorflow, Tableau, Microsoft, Pytorch, Pandas, Docker, Dialogflow, Numpy
- **Databases** - SQL/MySQL, Elastic Search, MongoDB

COURSES

- Machine Learning
- Distributed Systems
- Big Data
- Data Analysis with R
- Artificial Intelligence
- Algorithms
- Data Structures
- Database System

EXPERIENCE

GRADUATE RESEARCH ASSISTANT, COLORADO STATE UNIVERSITY, CO, MAY 2020 - CURRENT

- Currently working as a research assistant in Big Data and Distributed System research group. My work involves managing large spatiotemporal datasets and developing efficient time-series prediction models for them

SOFTWARE DEVELOPER INTERN, DATA DUCTUS, CO, MAY 2019 - AUG 2019

- Developed a chatbot agent using **NLP** and machine learning models. Created backend database storage system using **GoLang** and **SQL** to store client queries and update tickets of the respective projects on Bitbucket
- Developed a containerized light-weight message passing web server using GoLang and **Docker**
- Developed backend services for enterprise telecoms broadcast application using GoLang, SQL, and **Postgres**
- Assisted in database schema architecture modeling. Tested performance by building **Karate** API tests

GRADUATE TEACHING ASSISTANT, COLORADO STATE UNIVERSITY, CO, AUG 2019 - MAY 2020

- Worked as a graduate teaching assistant for big data coursework at graduate and undergraduate level
- Helped in setting up distributed cluster, designing models, cleaning large datasets, and troubleshooting **Apache** and **Hadoop** frameworks
- Conducted lab help sessions and guest lectures for graduate level Big Data course

ACHIEVEMENTS AND CERTIFICATIONS

- Recipient of Anita Read Graduate Award by Department of Computer Science at Colorado State University, 2020.
- Certificate for completion of Advanced Java course under Oracle
- Best paper award for Stash: Fast hierarchical aggregation queries for effective visual spatiotemporal explorations
- Conducted IT training as part of a community service initiative by Delhi University Women's Association
- Coursera certification for Cloud Computing
- Google Data Analytics Professional Certificate

PUBLICATIONS

- A Deep Learning Approach for Mitigating Occlusions in Landsat-8 Imagery using Data Coalescence. In review
- Attention-Based Convolutional Capsule Residual Networks for ET Estimation at Scale. Accepted in Environmental Modeling and Software Journal 2022
- Mind the Gap: Generating Imputations of Remote Sensing Datasets At Scale. CCGRID 2021
- Small is Beautiful: Distributed Orchestration of Spatial Deep Learning Workloads. UCC 2020
- Lightweight, Embeddings Based Storage and Model Construction Over Satellite Data Collections. IEEE Big Data 2020
- Stash: Fast hierarchical aggregation queries for effective visual spatiotemporal explorations (Best Paper Award). IEEE Cluster 2019
- Tweet Analysis for Real-Time Event Detection and Earthquake Reporting System Development. IRJET 2017

PROJECT EXPERIENCE

BIG DATA AND DISTRIBUTED SYSTEMS

- Implemented decentralized **Pastry** peer to peer network using Distributed Hash Table (DHT) to traverse the network efficiently for storing and retrieving content
- Designed a distributed, replicated, and fault-tolerant file system identical to **Google File Systems**. Incorporated file chunk partitioning, corruption detection/recovery and provided consistency with high scalability
- Built a **Hashtag Recommendation System** for images on social media using Apache Spark and Java
- Developed N-gram profile of the corpus of Wikipedia articles using Hadoop's MapReduce in Scala
- Built **Authorship Detection System** that suggests top similar authors using Cosine Similarity in MapReduce
- Performed classification of Youtube 8-Million videos using TensorFlow and Apache Spark

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

- Built the **drone world simulator** that picks best path in 3D map using Astar search, evolutionary algorithm, and CNNs. Also, implemented text parser using NLP to identify user's text inputs.
- Performed **human cell protein localization** by developing CNN based classification model using microscopic images of human cells using Python

REWARD NETWORK AS A FORM OF EXPERIENTIAL MARKETING

- Designed an **android app** in Android Studio and Eclipse to connect the customers and brands using rewards on virtual achievements; tested app across over 2000 users.