

# RISHAV RAJ AGARWAL

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## EDUCATION

### University of Waterloo | Canada

Sep 2018 – Present

#### *Master of Mathematics, Computer Science*

**Teaching Assistant:** Introduction to Programming in Python, Information Management Systems

**Relevant Coursework:** Theory of Deep Learning, Advanced Topics in AI, Algorithms

### Indian Institute of Technology (IIT) Kanpur | India

Jun 2012 – Jun 2016

#### *Bachelor of Science, Economics with Minor in Computer Science*

**Relevant Coursework:** Probability and Statistics, Econometrics, Machine Learning Techniques

## PROFESSIONAL EXPERIENCE

### Computer Vision Intern | Akasha Imaging | Canada

Apr 2020 – Present

- Creating, customizing and deploying deep learning solutions for computer vision tasks (object recognition) on propriety datasets.
- Working remotely and tracking software development using JIRA and following Agile methodology.

### Researcher (Data Science) | Premise Data | Canada

Sept 2019 – Apr 2020

- Analyzed multi-year data (>10B entries) and created models of political instability using regression analysis and ML algorithms.
- Collaborated remotely with a multi-disciplinary team across three time zones and geographies.

### Data Consultant-II | EXL Services | India

Sept 2016 – Aug 2018

- Created cloud based ETL bigdata work streams with Talend and spark pipelines as per business requirements.
- Implemented ML-based media mix predictive models for profitable mailing campaigns for a product portfolio worth USD 0.75M.
- Mentored interns and conducted a training session on data science competitions and machine learning techniques.

### Visiting Researcher | Multimedia and Networking Lab, Academia Sinica | Taiwan

May 2016 – Jul 2016

- Deployed ML techniques to predict the propensity to pay bills on time using credit card and phone activity time series data. | R

### Visiting Researcher | School of Communication and Information, Rutgers University | USA

May 2015 – Jul 2015

- Created a novel user modeling method to measure cooperation using phone-based spatial and temporal data. | R, WEKA

## SELECTED PUBLICATIONS

- [Under Review] Rashwan, A, **Agarwal, RR**, Kalra, A, & Poupart, P. MatrixNets: A New Scale and Aspect-Ratio Aware Architecture for Object Detection. 2020
- **Agarwal RR**, et al. Locating Influential Agents in Social Networks: Budget-Constrained Seed Set Selection. CAIAC, 2020.
- **Agarwal RR**, et al. Consentio: Managing Consent to Data Access using Permissioned Blockchains. ICBC, 2020.
- **Agarwal RR**, et al. Predicting financial trouble using call data—On social capital, phone logs, and financial trouble. PLoS ONE, 2018.
- Singh VK, **Agarwal RR**. Cooperative phoneotypes: exploring phone-based behavioural markers of cooperation. UbiComp, 2016.

## SELECTED PROJECTS

### MatrixNets: A Scale and Aspect-Ratio Aware Architecture for Object Detection

Sep 2019 – Present

- Engineered a light-weight deep learning module that achieves competitive results on MS COCO object detection task. | Pytorch
- Extending MatrixNets to instance segmentation task using one-stage and two stage architectures (Mask-RCNN).

### How Effective are Hypergraph Neural Networks?

Jan 2019 – Apr 2019

- Theoretical and experimental analysis of Hypergraph Neural Networks leading to an improved architecture. | TensorFlow

### Discovering Influential Nodes in Online Social Networks

Sep 2018 – Jan 2019

- Devised a novel AI algorithm to find influential nodes in a social network and tested it on multiple real-world data sets. | Python

## AWARDS AND HONOURS

- Received the Client Appreciation award at EXL services.
- Won a spot at the 5th Mega Heritage Photo Exhibition, a pan-India Photography competition.

Feb 2018

Aug 2017

## TECHNICAL SKILLS

- **Programming:** Python (Tensorflow, Pytorch, Numpy, NLTK, Json, Pandas, Scikit-learn) | R | SQL (PostgreSQL) | C++
- **Machine learning:** K-Nearest neighbor, GBM, XGBoost, Random Forest, PCA, Clustering, Deep Learning (DL), Computer Vision (CV)
- **Tools:** Weka | Git | LaTeX | MS Office | AWS | Google Cloud (GCP) | Tableau | Linux