

## EDUCATION

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- **Birla Institute of Technology and Science** Pilani, India  
*Bachelor of Engineering in Computer Science; GPA: 8.13 / 10.0* Aug. 2014 – July. 2018

## PUBLICATIONS

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- **Learning Digital Circuits: A Journey Through Weight Invariant Self-Pruning Neural Networks**  
*Amey Agrawal, and Rohit Karlupia*  
Proceedings of New in ML Workshop, NeurIPS, 2019, Vancouver [\[paper\]](#)
- **Delog: A Privacy Preserving Log Filtering Framework for Online Compute Platforms**  
*Amey Agrawal, Abhishek Dixit, Namrata Shettar, Darshil Kapadia, Rohit Karlupia, Vikram Agrawal, and Rajat Gupta*  
Proceedings of IEEE International Conference on Big Data, 2019, Los Angeles [\[paper\]](#)
- **Logan: A Distributed Online Log Parser**  
*Amey Agrawal, Rajat Gupta, and Rohit Karlupia*  
Proceedings of IEEE International Conference on Data Engineering (ICDE), 2019, Macau [\[paper\]](#)

## EXPERIENCE

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- **Qubole** Bangalore, India  
*Member of Technical Staff-II* Jul 2018 - Present
  - **Qubole MLflow**: Developed modules to fully integrate MLflow in Qubole ecosystem. Created a Jupyterlab plugin to serve as a bridge between notebooks and experiment tracking service.
  - **Managed RStudio Service**: Integrate RStudio as a managed service within Qubole's data science platform. Made open-source contributions to **Sparklyr** and **S3FS**. Received an **early promotion** as a result of exemplary performance.
  - **Logan**: Developed a distributed log parsing algorithm that provides **39x** speed-up over the previous state-of-the-art. Integrated the parser with Qubole Spark for real-time anomalous log detection. Received **Spotlight** award for this effort.
- **BITS Pilani** Pilani, India  
*Teaching and Research Assistant* Dec 2017 - May 2018
  - **Research Assistant - Prof. Kamlesh Tiwari**: Developed an autoencoder-like architecture to perform controlled geometric transformations on images in order to learn translation invariant features for Iris images.
  - **Research Assistant - Prof. Surekha Bhanot**: Evaluated feasibility of reinforcement learning based meta-optimizer for learning rate control with quantized action space.
  - **Teaching Assistant - Neural Networks & Fuzzy Logic**: Developed **Callisto**, an Electron app that provides a zero-setup Python environment for conducting evaluative assignments with Jupyter notebooks.
  - **Teaching Assistant - Machine Learning**: Designed and evaluated programming assignments in Python. Held boot-camp sessions on scientific Python ecosystem.
- **Qubole** Bangalore, India  
*Software Engineering Intern* Jul 2017 - Dec 2017
  - **Deep Learning Cluster**: Developed beta version of Qubole's enterprise distributed deep learning platform. Received **Spotlight** award for cross-team collaboration.
- **Norah.ai** Bangalore, India  
*Machine Learning Research Intern* May 2017 - Jun 2017
  - **Text to Humanoid Animation**: Developed a sequence to sequence model for text to animation conversion using Keras.
- **Bharat Heavy Electrical Limited (BHEL)** Trichy, India  
*Software Engineering Intern* May 2016 - Jul 2016
  - **Sitemap-Draw**: Created a web-crawler and sitemap visualization tool in NodeJs.
  - **Log Warehouse**: Developed log storage and management tool using MongoDB and Python.

- Callisto**
    - Developed cross-platform desktop application built with Electron and Express for neural networks course.
    - Automatically sets up uniform scientific python development environment independent of operating system.
    - Allows students to download and launch assignment Jupyter notebooks with a single click.
    - Evaluation mode enables programming contests using nbgrader.

*Jan 2018*  
[\[Blog\]](#) [\[Demo\]](#) [\[GitHub\]](#)

*Guide: Prof. Surekha Bhanot*
- Disentanglement learning for iris image indexing**
    - Designed an autoencoder architecture to learn horizontal translation-invariant representations of normalized iris images.
    - Established proof of concept on MNIST, Fashion-MNIST and CIFAR10 datasets.

*Jan 2018 - May 2018*  
[\[Blog\]](#) [\[Google Colab\]](#)

*Guide: Prof. Kamlesh Tiwari*
- Deep Q-learning for autonomous warehouse robots**
    - Implemented a Deep Q-learning algorithm to make warehouse robots which can learn to navigate autonomously.
    - Developed 2D simulations using pybox2D and 3D simulations using V-rep.
    - Implemented the neural network using keras.

*Jan 2017 - Apr 2017*  
[\[GitHub\]](#)

*Guide: Prof. Surekha Bhanot*
- CNN visualization toolkit**
    - Integrated a collection of popular CNN visualization techniques into a single framework which can take any Keras CNN model as input.
    - Developed backend web server using Flask.

*Apr 2017*  
[\[GitHub\]](#)

*Guide: Prof. Sundaresan Raman*
- NIRF Ranking Analysis**
    - Performed extensive analysis of ranking metrics and proposed an alternative metric to measure research outcome of universities.
    - Scrapped data used to calculate rankings of Indian engineering schools from National Institutional Ranking Framework's (NIRF) website.
    - Parsed PDFs by creating a finite state machine using TextFSM.

*May 2018*  
[\[Blog\]](#) [\[GitHub\]](#)

*Open Source Initiative*
- Automated news-in-shorts**
    - Latest posts from RSS feeds of multiple news agencies are aggregated to automatically generate abstracts for top stories.
    - Trending topics on twitter are mapped to clusters of news articles to identify trending news.
    - All the articles on a given trending topic are summarized using extractive text summarization using sumy.
    - Developed web clients and REST API using MongoDB and Express.
    - Implemented text processing pipeline using NLTK, Scikit-learn and Gensim.

*Nov 2016*  
[\[GitHub\]](#)

*Guide: Prof. Poonam Goyal*
- Pokemon MMORPG**
    - Designed and developed fully distributed multi-player online game entirely in C.
    - Used Redis as message broker and MongoDB as database.

*Mar 2017 - Apr 2017*  
[\[GitHub\]](#)

*Guide: Prof. Rahul Banerjee*
- Arxiv-Sanity v2.0**
    - Revamped Andrej Karpathy's Arxiv-Sanity for improved functionality and a better UI.
    - Built upon the existing flask web server and migrated database to MongoDB for scalability.

*Feb 2017*  
[\[GitHub\]](#)

*Open Source Initiative*
- Real-time classification of network traffic**
    - Developed random forest and multi layer perceptron models to perform real-time classification of network traffic.
    - Implemented models using Scikit-learn and Keras and captured live packets using PyShark.

*Mar 2017 - Apr 2017*

*Guide: Prof. Amit Dua*
- Predicting Election Results using Twitter**
    - Built a CNN model with word embeddings to perform sentiment analysis on tweets pertaining to US presidential elections.
    - Implemented CNNs from the ground up in vanilla python.

*Apr 2015*

*Guide: Prof. Vandana Agrawal*

## TECHNICAL SKILLS

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- **Languages:** Proficient in Python, Scala, JavaScript, Bash, Familiar with Java, Ruby, R, C/C++
- **Data Science:** PyTorch, Keras, Spark, TensorFlow, Scikit-learn
- **Web & UI:** Express, Flask, Jetty, Ruby on Rails, Electron, JQuery, React
- **Databases:** MySQL, Redis, MongoDB, SparkSQL
- **Misc:** Git, Markdown, L<sup>A</sup>T<sub>E</sub>X, Jenkins, CorelDraw

## SELECTED COURSEWORK

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- **Mathematics:** Multivariable Calculus, Linear Algebra, Probability & Statistics, Differential Equations
- **Software Engineering:** Object Oriented Programming, Computer Networks
- **Systems:** Database Management Systems, Database Systems
- **Data Science:** Machine Learning, Information Retrieval, Neural Networks and Fuzzy Logic, Cognitive Computing

## EXTRACURRICULAR ACTIVITIES

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- Designed and developed websites for BITS-Pilani's cultural and technical festivals while working at students' union's department of visual media.
- Worked with English Press Club at BITS-Pilani to design vector graphics and illustrations for institute's annual students' magazine Cactus Flower.
- Organized Concepticon, an event for awareness about career options in STEM. The event saw participation from more than one thousand high school students.