Md. Rayed Bin Wahed

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EDUCATION

- **BRAC University** — Dhaka, Bangladesh
  Bachelor of Science in Computer Science; CGPA: 3.75/4.00 — *Jan 2012 – Aug 2016*

EXPERIENCE

- **Therap (BD) Ltd.** — Dhaka, Bangladesh
  Software Engineer, System Architecture Team — *Oct 2016 - Present*
  - **About**:
    * Therap (BD) Ltd. is a fully owned subsidiary of Therap Services LLC, USA.
    * Therap is an online documentation, reporting and communication software suite for agencies supporting individuals with Intellectual and Developmental Disabilities (I/DD).
  - **Core Responsibilities**:
    * As a full-stack developer, I write and maintain modules mostly related to but not exclusive to system administration and user login.
    * I write programs critical to the performance and security of the system.
    * I author in-house front-end and back-end libraries/frameworks that other teams use to do their development work.
    * I play for the Therap football team and voluntarily schedule practice mathches and organize transportation.
  - **Core Technologies**: Java EE, Spring MVC, Hibernate ORM, Javascript, SQL, Oracle Weblogic, Gradle, Git, Bash.

- **BRAC University** — Dhaka, Bangladesh
  Teaching Assistant — *Jan 2014 - Aug 2016*
  - **Data Structures and Discrete Mathematics**:
    * Graded quizzes.
    * Provided one-to-one consultations.
    * Assembled and distributed supplementary study materials.

DEEP LEARNING

- **Degree Thesis**
  Comparative Analysis Between Learning Models Using Facial Expression Recognition — *Jan 2016 - Oct 2016*
  - **Objectives**:
    * Investigate the training time and prediction accuracy of Google's Inception-v3 Deep Neural Network (DNN) architecture in comparison to popular variants of Support Vector Machines (SVM) and a Convolutional Neural Network (CNN) model of our own design.
    * Do so using CPUs to assess it's viability as a feasible model for deployment in mobile devices.
  - **Result**:
    * The Inception-v3 architecture outperformed all previous benchmarks.

- **Deep Learning Specialization**
  Five course Coursera Specialization taught by Prof. Andrew Ng of Stanford Univsersity — *Dec 2016 - Mar 2017*
  - **Course 1: Neural Networks and Deep Learning**:
    * Understand the major technology trends driving Deep Learning.
    * Be able to build, train and apply vectorized implementations of fully connected deep neural networks.
    * Understand the key parameters in a neural network's architecture.
  - **Course 2: Improving Deep Neural Networks, Hyperparameter tuning, Regularization and Optimization**:
    * Understand industry best-practices for building deep learning applications.

* Be able to effectively use common neural network "tricks", including initialization, L2 and dropout regularization, batch normalization, gradient checking.
* Be able to implement and apply a variety of optimization algorithms, such as mini-batch gradient descent, Momentum, RMSprop and Adam, and check for their convergence.
* Understand new best-practices for the deep learning era of how to set up train/dev/test sets and analyze bias/variance.
* Be able to implement a neural network in TensorFlow.

○ **Course 3: Structuring Machine Learning Projects**:
* Understand how to diagnose errors in a machine learning systems.
* Be able to prioritize the most promising directions for reducing errors.
* Understand complex ML settings, such as mismatched training/test sets, and comparing to and/or surpassing human-level performance.
* Know how to apply end-to-end learning, transfer learning, and multi-task learning.

○ **Course 4: Convolutional Neural Networks**:
* Understand how to build a convolutional neural network, including recent variations such as residual networks.
* Know how to apply convolutional networks to visual detection and recognition tasks.
* Know to use neural style transfer to generate art.
* Be able to apply these algorithms to a variety of image, video, and other 2D or 3D data.

○ **Course 5: Sequence Models**:
* Understand how to build and train Recurrent Neural Networks (RNNs), and commonly-used variants such as GRUs and LSTMs.
* Be able to apply sequence models to natural language problems, including text synthesis.
* Be able to apply sequence models to audio applications, including speech recognition and music synthesis.

● **Books**
Deep learning with Python by Francois Chollet of Google Brain

○ **Review**:
* The book is written by the author of Keras himself. Keras is a high-level framework for TensorFlow which makes working with TensorFlow a breeze.
* The book provides first class, hands on, deep dive into the essentials and best practices of Deep Learning.
* Using real datasets, the book does a fantastic job explaining and implementing advanced concepts such as Transfer Learning, Text and Image Generation with Variable Autoencoders, and Generative Adversarial Networks (GANs).

PROGRAMMING SKILLS

● **Languages**: Python, Keras, TensorFlow, Scikit-Learn, Numpy, Pandas, Matplotlib, SciPy, Pytorch, Java, JavaScript