Md. Rayed Bin Wahed

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EDUCATION

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

EXPERIENCE

- **Therap (BD) Ltd.** — Banani, Dhaka
  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 for the system team, I write and maintain modules mostly related to system administration and user login. Additionally, I write programs critical to the performance and security of the system. Finally, I authored front-end and back-end libraries that other teams use internally for their development.
  - **Core Technologies**: Java EE, Spring, Hibernate, Javascript, SQL, Oracle Weblogic, Gradle, Git, Bash.

- **BRAC University** — Mohakhali, Dhaka
  Teaching Assistant — *Jan 2014 - Aug 2016*
  - **Data Structures**: Taught Data Structures for a total of five semesters. I graded quizzes and assembled supplementary practice material for students
  - **Discrete Mathematics**: Taught Discrete Mathemetics for one semester grading quizzes and providing supplementary learning materials.

DEEP LEARNING

- **Degree Thesis**
  Comparative Analysis Between Learning Models Using Facial Expression Recognition — *Jan 2016 - Oct 2016*
  - **Objective**: Our objective was to investigate how efficiently Google's Inception-v3 deep neural network architecture performed in comparison to some popular variants of SVMs at the time, a few shallow neural nets and a CNN model designed by us in a computationally harsh environment such as mobile GPU.
  - **Results**: We found that the Inception-v3 module outperformed all previous benchmarks and provided the best although actually testing the performance of each model in a mobile device was left as future work.
  - **Link**: Comparative Analysis Between Inception-v3 And Other Learning Systems Using Facial Expression Recognition

- **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 fully connected deep neural networks
    * Know how to implement efficient (vectorized) 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 the 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 system, and
  * Be able to prioritize the most promising directions for reducing error
  * 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**: This book by the author of Keras (framework for TensorFlow) himself is a first class, hands on, deep dive into the essentials and best practices of Deep Learning. Working with 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**: Java, JavaScript, Python, Keras, TensorFlow, Numpy, Pandas, Matplotlib, SciPy, Pytorch