

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 matches 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 University 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, Numpy, Pandas, Matplotlib, SciPy, Pytorch, Java, JavaScript