

# Ashrafal Arefeen

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## RESEARCH INTEREST EDUCATION

Deep learning, Machine learning, Algorithms, Computational biology

### University of California, Riverside (UCR)

- Ph.D. in Computer Science (Cumulative GPA: 3.81 / 4.00) October, 2014 – Current
  - Adviser: Prof. Tao Jiang

### Bangladesh University of Engineering and Technology (BUET)

- B.Sc. in Computer Science and Engineering (Cumulative GPA: 3.85 / 4.00) January, 2006 – February, 2011
  - Class position: 12<sup>th</sup> (among 138 students)

## RESEARCH EXPERIENCE

### Ph.D. projects

- DeepPolyA: Deep learning based polyadenylation site analysis.
  - A deep learning based tool is modeled for predicting polyadenylation sites from sequence data. The tool detects polyadenylation sites from both coding and noncoding regions. In addition, the tool predicts tissue specific polyadenylation sites. Moreover, when multiple polyadenylation sites of a gene are given, it detects relatively strong polyadenylation site.
- TAPAS: Tool for Alternative Polyadenylation Site Analysis
  - a new algorithm has been proposed for detecting novel alternative polyadenylation (APA) sites from RNA-Seq data. It can deal with more than two APA sites in a gene. After detecting novel APA sites, the tool identifies differentially expressed APA sites between two biological samples. It also identifies shortening/lengthening events in 3' untranslated regions of genes.

## PUBLICATION

- Journal**
  - TAPAS: Tool for Alternative Polyadenylation Site Analysis. February 23, 2018, [Bioinformatics](#)

## WORK EXPERIENCE

### Therap Services LLC

- Software engineer March, 2011 – August, 2014
  - Designing and Developing Health Insurance Portability and Accountability Act (HIPAA) compliant documentation software solution for development disabilities support providers in United States of America.

## PROFESSIONAL PROJECTS

- Employment and Volunteering History Module ([LinkedIn](#)) March, 2014 – November, 2014
  - Using this module employment specialists can maintain a directory of employers and the jobs they offer. It allows user to find jobs that matches the skills and the need of the individuals. It also helps the user to keep track of all employment referrals, assessments, milestones, and manage the training and coaching requirements of the individuals.
- Individual Support Plan ([LinkedIn](#)) March, 2012 – June, 2013
  - The full life-cycle of yearly plan building for persons with developmental disabilities is being done using this module.
- Time Tracking Module ([LinkedIn](#)) December, 2010 – May, 2011
  - This module is designed to be used by agencies/service providers. They support people who need timely monitoring.
- Issue Tracker Module ([LinkedIn](#)) February, 2010 – March, 2012
  - Issue tracker module is an online platform for the Therap users to communicate with the live support provider of the company. Both the users and the live support persons can track the status of these issues using this module.

## ACADEMIC PROJECTS

- Digit recognition using neural network and support vector machine (SVM)
  - Neural network algorithm is implemented for digit recognition (Matlab). Performance comparison is done by changing parameters: number of node per layer, number of layers etc. The performance of the neural network model is also compared with SVM for the given data.
- Suffix tree for searching short read in reference genome.
  - Suffix tree algorithm is implemented to search short reads in reference genome (Java).
- Weather Analyzer.
  - Weather station data is analyzed to output some stats and to find the most stable temperatured state (Hadoop and Java).

## SKILLS

**Neural network API:** Keras; **Programming language:** Python, C, C++, Java; **Statistical computing and graphics:** R; **Numerical computing environment:** Matlab; **Big data stores:** Hadoop; **Build tools:** Maven; **Application framework:** Spring; **Object-relational mapping tool:** Hibernate; **Version control system:** Git; **Operating system:** Unix/Linux; **Application server:** Tomcat, JBoss, Weblogic.

## AWARDS & SCHOLARSHIPS

- Dean's Distinguished Fellowship, Department of Computer Science, UCR.
- Talent Scholarship, Department of Computer Science and Engineering, BUET.
- General Scholarship, Department of Computer Science and Engineering, BUET.
- Dean's list, Department of Computer Science and Engineering, BUET (four years).