

# MOHAMMED METHUN KAMRUZZAMAN

mobile: + 1(509)336 - 9938, email:mhmethodun@gmail.com, website:mhmethodun.com

## EXPERIENCE

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- Research Assistant, Washington State University** (Fall,2015 - Current)
- ▷ Developing theory and algorithm to identify interesting subpopulations from high dimensional phenomics dataset.
  - ▷ Developing and maintaining a software HYPP0-X in C++ that will help bio-scientists to extract plausible hypothesis.
  - ▷ Developing web-based interactive visualization software using PHP and javascript framework D3.
- Software engineer, KBGroup UK** (<http://www.kbgroupuk.com>) (July,2010 - July,2015)
- ◊ Developed one of the E-commerce websites (CFT) from scratch.
  - ◊ New website increased the ticket sale more than 13% compared to previous years.
  - ◊ Led a development team of size 6 from 2014 to 2015.
- Software engineer, NazimCorp. Resource Gateway** (May,2009 - June,2010)
- ▷ Developed utility-based iOS applications.

## EDUCATION

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- Ph.D. in Computer Science**, cgpa: 3.83/4.00 (Fall,2015 - Current)  
Washington State University, WA, USA  
Under the supervision of Prof. Ananth Kalyanaraman
- B.Sc. in Computer Science and Engineering**, cgpa: 3.66/4.00 (2004 - 2009)  
Bangladesh University of Engineering and Technology, Bangladesh

## ACADEMIC PROJECTS

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- Used Python to implement both *perceptron* and *passive-aggressive (PA)* algorithms.
- Used Machine learning tools (*libsvm* and *weka*) for following classifiers: SVM, K-Nearest Neighbor, decision tree, Naive Bayes, and Logistic Regression.
- Used Machine learning methods (feature selection, SVM, forecasting) to detect highly productive soybean varieties.
- Developed a software in C++ to align more than 900k reads to a reference genome (Cherry) sequence (more than 300k long) using:
  - a) approximate alignment technique (Local alignment with affine gap penalty) and
  - b) exact matching technique (Suffix tree with suffix link).
- Analyzed the effect of environmental attributes on crop phenotype using *Exploratory Data Analysis*.
- Developed software with user interface in R that implements a heuristic for the set covering problem.

## PUBLICATIONS

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- i) **Characterizing the Role of Environment on Phenotypic Traits using Topological Data Analysis.** [2-page abstract in ACM-BCB 2016]  
<https://dl.acm.org/citation.cfm?doid=2975167.2985646>
- ii) **Interesting Paths in the Mapper.** [Submitted]  
<https://arxiv.org/pdf/1712.10197.pdf>
- iii) **Toward A Scalable Exploratory Framework for Complex High-Dimensional Phenomics Data.** [Submitted]  
<https://arxiv.org/pdf/1707.04362.pdf>