

Md Yousuf Ali

Silver spring, Maryland

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SUMMARY

Pharmaceutical Scientist by training with a strong aptitude for learning new skills to solve data science problem in the biomedical/life science field. Bringing exceptional Research, CDISC Data Standards, Programming, Statistical Analysis, Machine Learning, and Deep Learning skills.

SKILLS

- R, R Shiny, RStudio Server, RStudio Connect, Rmarkdown, Python, SQL, Tableau, AWS, Google Cloud, Git/GitHub, Docker, Linux/Unix shell scripting, HTML, CSS, JavaScript
- Data Wrangling and Visualization (dplyr, data.table, ggplot2)
- Software - SEND explorer, Janus Nonclinical, GraphPad Prism, ImageJ, SPSS, ChemDraw, Endnote, Microsoft office, PowerPoint
- Molecular Biology - Cell Culture, Western Blot, ELISA, Gene Knockdown, RNA Extraction

PROFESSIONAL EXPERIENCE**ORISE Postdoctoral Fellow**

Advisor: Kevin Snyder, Ph.D.

OND/IO/Pharmacology Toxicology Team

Food and Drug Administration (FDA)

Silver Spring, MD

- Building an R Shiny web app, toxSummary, for summarization and visualization of nonclinical/toxicological studies. App is designed to facilitate holistic evaluation of the drug safety by integrating the results of multiple toxicology studies in the context of a clinical dosing regimen. Internally Deployed on FDA server. Also, deployed on public server at <https://phuse-org.shinyapps.io/toxSummary/>. App demonstration can be found at <https://www.youtube.com/watch?v=56V2yxPTWtk>. Recently, adding more feature to automate user input for dose and corresponding pharmacokinetics parameter such as AUC and Cmax value.
- Building Bayesian Model to incorporate historical control data for assessing treatment effect in nonclinical study. Project include an R shiny app for non-programmer toxicologist. R shiny app deployed on <https://yousuf28.shinyapps.io/BayesianTox/> and app demonstration can be found at <https://www.youtube.com/watch?v=35psCFPcge8>
- Building an R package (sendigR), in collaboration with BioCelerate, which will help data scientist to analyze and visualize nonclinical historical control data. An R shiny app also included in the package to demonstrate how package works and would be useful for non-programmer. Project can be found on GitHub: <https://github.com/phuse-org/sendigR>. R shiny app deployed on PHUSE server: <https://phuse-org.shinyapps.io/sendigR/>. A presentation can be found on YouTube at <https://www.youtube.com/watch?v=OHsxdDY0xrQ>.

03/2020

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Current

Research Assistant

Advisor: Margaret Weis, Ph.D.

Department of Pharmaceutical Sciences

Texas Tech University Health Sciences Center, Amarillo, TX

01/2015

- Designed and conducted a project that showed cytokine-stimulated iNOS expression requires long chain fatty acyl-CoA synthetase (ACSL) in brain ischemic model. - 02/2020
- Designed and conducted a project that showed HNF-4 α does not play any role in iNOS expression in bEnd.3 and C6 astrocytoma cells

Product Development Officer

ACI Limited (Pharmaceuticals)

Narayangonj, Dhaka, Bangladesh

12/2013

- Performed physical and chemical test relevant to product development, analytical method development, and validation - 07/2014
- Performed physical and chemical tests requires for stability analysis such as accelerated stability, real-time or ongoing study of new products

Quality Assurance Officer

Renata Limited, Dhaka, Bangladesh.

07/2013

- Actively participated with the expert during Installation Qualification (IQ) and Operational Qualification (OQ) of different pharmaceutical machines like Rapid Mixing Granulator and Capsule Filling Machine - 10/2013

PERSONAL PROJECTS**Finding Donors for CharityML – Machine Learning [SVM, Gradient Boosting, Scikit-learn]**

- Implemented supervised algorithms to identify people most likely to donate with accuracy 0.87

Sentiment Analysis Web App Deep Learning [RNN, PyTorch, AWS, SageMaker]

- Trained recurrent neural network and deployed a model using amazon sagemaker. The model was used to predict the sentiment of the entered movie review

Communicate Data Finding – Data Analysis [Matplotlib, Seaborn, Pandas, Numpy]

- Created more than 60 plots in univariate, bivariate, and multivariate category for exploratory data analysis (EDA)

Startups using AI for drug discovery - Towards Data Science [Web scraping, Blog]

- Gathered the data and created a map of startups using Artificial Intelligence (AI) for drug discovery

Setup Bioconductor and learn Bioinformatics - posted on YouTube [Docker, R, Bioinformatics]

- Showed how to setup Bioconductor with docker for learning bioinformatics

EDUCATION**Ph.D. in Pharmaceutical Sciences**

Texas Tech University Health Sciences Center, Amarillo, TX

GPA

Year

3.97

02/2020

Masters in Pharmaceutical Chemistry

University of Dhaka, Dhaka, Bangladesh

3.69

2010

Bachelor of Pharmacy

University of Dhaka, Dhaka, Bangladesh

3.85

2008

CONFERENCE PRESENTATIONS

- Mark Carfagna, Kevin Snyder, William House, **Md Yousuf Ali**, Philip Drew “Collaboratively Cracking the SEND Code: Unlocking the Potential Value of Standardized Toxicology Study Data”. Presented as workshop at American College of Toxicology (ACT) 11/2021
- Kevin Snyder, **Md Yousuf Ali**, Jesse Anderson, William Houser, Daniel Russo, Bo Larsen, Mark Carfagna “Cross-Study Analysis of SEND Datasets Using an R Package: sendigR”. American College of Toxicology (ACT) 11/2021
- **Md Yousuf Ali**, Kevin Snyder, James Travis “Incorporation of Historical Control Data in the Detection of Treatment-Related Effects in Toxicology Studies via Bayesian Inference”. American Society for Cellular and Computational Toxicology (ASCCT) 10/2021
- Kevin Snyder, **Md Yousuf Ali**, Jesse Anderson, William Houser, Daniel Russo, Bo Larsen, Mark Carfagna “Cross-Study Analysis of SEND Datasets Using an R Package: sendigR”. PHUSE Computational Science Symposium (PHUSE-CSS) 09/2021
- **Md Yousuf Ali**, Kevin Snyder “Bayesian approach to detection of treatment-related effects in toxicology studies by borrowing information from historical control animals”. PHUSE US-Connect: The Clinical Data Science Conference 06/2021
- **Md Yousuf Ali**, Kevin Snyder “Interactive visualization and summarization of toxicology study results across species, routes and durations throughout a drug development program using R Shiny”. PHUSE US-Connect: The Clinical Data Science Conference 06/2021
- Kevin Snyder, William Houser, Bo Larsen, **Md Yousuf Ali**, Dan Russo “Cross-study Analysis of SEND Datasets Using an R package: sendigR”. PHUSE US-Connect: The Clinical Data Science Conference 06/2021
- **Md Yousuf Ali**, Kevin Snyder “An interactive, open source software tool for summarization and visualization of an API’s toxicological profile across species, route of administration, and study duration”. Society of Toxicology (SOT) 03/2021
- Joseph Horvath, Mark Carfagna, Christopher Eley, Tamio Fukushima, William Houser, Cheryl Sloan, Todd Page, Jesse Anderson, Kevin Snyder, Rick Thompson, Bo Larsen, Gitte Ullmann, **Md Yousuf Ali** “Utilizing CDISC SEND Data to Generate Historical Control Incidence from a Large Database of Toxicology Studies”. Society of Toxicology (SOT) 03/2021
- Presented toxSummary, an R Shiny app, to Expo of R/Pharma conference 10/2020
- **Md Yousuf Ali**, Kevin Snyder “Interactive Summarization and Comparison of Repeat-dose Toxicology Study Results Throughout a Drug Development Program Using an R Shiny App”. PHUSE Computational Science Symposium (PHUSE-CSS) 09/2020
- **Md Yousuf Ali**, Margaret Teresa Weis. "Inhibition of Long Chain Fatty Acyl CoA Synthetase Modulates Inducible Nitric Oxide Synthase Expression". Society for Neuroscience, Chicago, IL. 10/2019
- **Md Yousuf Ali**, Margaret Teresa Weis. "Cytokine-stimulated iNOS Expression Requires Long Chain Fatty Acyl CoA Synthetase (ACSL)". Experimental Biology, Orlando, FL 04/2019

PUBLICATIONS

- William Houser, Bo Larsen, Daniel Russo, Kevin Snyder, **Md Yousuf Ali**, Michael Rosentreter, Vaishnavi Methuku, Brianna Paisley. sendigR: An R Package to Leverage the Value of CDISC SEND Datasets for Cross-Study Analysis. *Manuscript in Preparation*
- Syeda Sadia Ameen, S.R.J., **Md Yousuf Ali**. Evaluation of The Anti-Inflammatory and Antipyretic Activities of The Plant *Alpinia Nigra* (Family: Zingiberaceae). *World Journal of Pharmaceutical Research* 3, 164-170 (2014).
- **Md Yousuf Ali**, U.K.M. Antioxidant, Antimicrobial and Toxicological Investigation of Propolis: Pharmacological evaluation of Propolis collected from Sudarbans. LAMBERT Academic Publishing, 2012.

GRADUATE COURSES

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| • Pharmacokinetics | • Intermediate Biostatistics | • Principle of Disease |
| • Drug Delivery System | • Biomedical Informatics | • Principle of Drug Action |
| • Pharmacology | • Advanced Neuroscience | • Biochemistry |
| • Regulatory Affairs | • Cerebrovascular Biology | • Immunology |

ONLINE CERTIFICATIONS

CDISC Data Standards	04/2020
Bioconductor for Genomic Data Science - Coursera	06/2019 – 08/2019
Deep Learning Nanodegree - Udacity	03/2019 - 06/2019
Data Scientist Nanodegree - Udacity	11/2018 - 03/2019
Data Analyst Nanodegree - Udacity	09/2018 - 12/2018
Statistics with R Specialization (four courses) - Duke University - Coursera	03/2018 - 10/2018
Inferential Statistics - University of Amsterdam - Coursera	10/2017 - 01/2018

AWARDS AND HONORS

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| • GSBS President's Travel Scholarship for Society for Neuroscience conference | 2019 |
| • TTUHSC- AAPS Student Chapter travel award for American Association of Pharmaceutical Scientists (AAPS PharmSci 360) conference | 2019 |
| • Cayman Chemical Travel Grant | 2019 |
| • American Association of Bangladeshi Pharmaceutical Scientists (AABPS) travel award | 2019 |
| • Travel Grant from "Bangladesh-Sweden Trust Fund" for higher studies in abroad | 2015 |

PROFESSIONAL ASSOCIATIONS

- Data Science and Software Development (DSSD) group, FDA.
- Society of Toxicology
- American College of Toxicology (ACT)
- American Association of Pharmaceutical Scientists (AAPS)
- American Society for Biochemistry and Molecular Biology (ASBMB)
- Society for Neuroscience (SFN)
- American Association of Bangladeshi Pharmaceutical Scientists (AABPS)