Desta A. Hailemariam

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EDUCATION

PhD Candidate, Industrial and Systems Engineering, Binghamton University, State University of New York. Exp. 2016
M.Sc., Industrial Engineering and Management, Production and Logistics Management track, Aug. 2010
B.Sc., Industrial Engineering, Mekelle University, Ethiopia, July 2006

COMPUTER/ SKILLS

Data Science and Programming Tools: R, Python, SQL, VBA, Microsoft Azure, Matlab, SAS, Weka
Certificate: Lean Six Sigma Green Belt
Methodology: Predictive Analytics/ Machine Learning, Data Analysis, Simulation, Lean Six Sigma, Operations Research, Optimization
Engineering Applications: Simio Simulation, ARENA Simulation, Expertfit, SAS, Minitab

CAREER INTEREST

Data Scientist, Healthcare Process Improvements; currently looking for a data scientist or a healthcare improvement position. Currently taking a number of edx and Coursera data science courses with projects conducted in R, Python, SQL, and Microsoft Azure.

EXPERIENCE

New England Veterans Engineering Resource Center, US Department of Veterans Affairs, Graduate Research Associate
Jan. 14 – Present

- Led a project that aimed in determine optima staff mix for the New England VA anticoagulation clinics (ACCs)
- Visited five clinics and observed a time-studied the processed
- Developed a Simio simulation model to compared several staffing scenarios
- Determined the proportion of workload that can be done by pharmacists and pharmacy technicians
- Developed Excel VBA base semi-automated tool that calculates the optimal full-time equivalents of pharmacist and pharmacist technician required to run an ACC.

UHS Hospitals, Graduate Research Associate Jun. 14 – Dec. 14

1. **Predictive Analytics to predict 30 days risk of readmission of patients**
   - Applied data-mining techniques to develop 30 days hospital readmission prediction models to UHS patients using R
   - Applied sampling techniques to preprocess patient data (including demographic, medical, and laboratory measures) to remove outliers and to overcome class imbalance
   - Presented finding to the UHS research group
   - Published finding in a journal and a conference
2. **Productivity Improvement for UHS Urology**
   - Conducted time study to collect data on patient waiting times and service times
   - Developed a simulation model using Simio to analyze the wait time of patients and the staff productivity

Binghamton University, State University of New York, Teaching Assistant Aug. 12 – May. 14

- Assist professors with review of course projects and grading.
- Hold weekly office hours to tutor and review students work
- Teach discussion classes

Mekelle University, Ethiopia, Lecturer Sept. 10-Jul. 12

Dissertation

Developed dynamic admission control protocols for hospital inpatient admission and for inter-hospital patient transfers

- Formulated Markov decision process based admission control model
- Solved the model in Matlab to obtain the optimal admission control threshold values
- Developed a fuzzy rule based patient transfer system that can help healthcare manager to make decision when to transfer patients to other hospitals.

Other Selected Projects

Streamlining Quality Control Applications in Fluid Dispensing process Sept. 13 – Dec. 13

- Designed experiments (DOE) to identify the significant parameters for jetting pump system.
- Analyzed the process capability of the system.
- Wrote a report and presented findings to class.

Multivariate Data Analysis, Group Project Feb. 13 – May 13

- Developed a predictive Logistic regression model for breast cancer data using SAS
- Wrote a report and presented it to in class

Simulation and Modeling, Group Project Feb. 13 – May 13

- Simulated the Harpur's Ferry student volunteer ambulance service focusing on its utilization and response times
- Statistically analyzed the result of the simulation model
- Documented a report and presented findings to class.

Lean Six Sigma for Healthcare Cost Containment, Term Paper Oct. 12 – Dec 12

- Discussed the main cost drivers of healthcare delivery systems.
- Explored how the merger of Six Sigma and Lean thinking in healthcare can improve healthcare processes thereby helping contain healthcare costs.

Optimization of Healthcare Processes, Group Project Jan. 09 – June 09

- Made decision on how many operating rooms (ORs) to open, divided the ORs over the specialties, and decided how long to open the ORs during a regular working day.
- Developed a simulation model to measure the performance of our choices in various performance indicators such as overtime and patient cancellations.

Simulation, Group Project Sep. 08 – Dec. 08

- Built a Plant Simulation model for Prefab concrete production,
- Conducted an experimental design, and
- Statistically analyzed the result of the simulation model.

Discrete Optimization of Business Processes, Group Project Sep. 08 – Dec. 08

- Solved combination optimization real case problems by applying exact and heuristic algorithms in a Delphi programming.
- Wrote and executed adaptive search and simulating annealing algorithms in a Delphi program to solve the so called Parallel machine and Order Picking problems, respectively.

HONORS AND AWARDS

- Prize for good research, Moxba-Metrex, Netherlands Aug. 10
- University of Twente Scholarship Program (UTSP) Jan. 08
- Distinction in Industrial Engineering, Mekelle University Jul. 06
- Activity and Society: Alpha Pi Mu Industrial Engineering Honor Society and Institute of Industrial Engineers
- Certificate of appreciation for participating in the System Science and Industrial Engineering Ambassadors Program

Selected Graduate Level Courses

Coursera and edx Courses

- Introduction to R Programming
- Introduction to Computer Science and Programming Using Python
- Practical Machine Learning
- Data Science and Machine Learning Essentials
- Querying with Transact-SQL

Binghamton University

- Multivariate Data Analysis
- Applied Soft Computing
- Fuzzy Sets, Fuzzy Logic, and Fuzzy Systems
- Industrial & Systems Engineering in Healthcare
- Advanced Issues in Quality
- Modeling and Simulation
- Processes for Electronics Manufacturing

University of Twente

- Statistics and Probability
- Empirical Research and Data Analysis
- Operation Research Methods
- Optimization of Healthcare Processes 2
- Discrete Optimization of Business Processes
- Supply Chain and Transportation Management
- Purchasing Management