SUDHAN BHATTARAI

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GitHub: https://github.com/sudhan-bhattarai?tab=repositories/

EDUCATION

- *Degree*: **Master of Science**
  Major: **Industrial & Systems Engineering**
  Colorado State University-Pueblo, Pueblo, CO.
  Graduation date: May 2021 (Expected)

- *Degree*: **Bachelor of Engineering**
  Major: **Industrial Engineering**
  Tribhuvan University, IOE, Kathmandu, Nepal.
  Graduation date: May 2017

AREAS OF INTEREST

- *Machine learning & data science*

- *Artificial intelligence*

- *Healthcare applications & analytics*

- *Optimization*

EXPERIENCE

✓ **Colorado State University-Pueblo, Department of Engineering, Pueblo, CO, USA, 81001.**
  Graduate Research Assistant **(**Aug 2019 - Present**)**
  - Supervisor: Associate Professor Dr. Leonardo Bedoya-Valencia
  - Areas of research: Operations Research, Data Science, Machine Learning, and Healthcare Applications.
  - Conducted intensive literature review on healthcare scheduling problems, optimization method, heuristic methods, and benders decomposition.
  - Conducted a research on building a new efficient home-healthcare routing (HHCR) plan with Mixed Integer Programming (MIP) approach.
  - Carried out experimentations of the healthcare scheduling algorithms from literature.
  - Developed a new problem and a new algorithm to address and solve the dynamic nature of patients to build routing plan with an objective of maximizing the total visits.

  Graduate Teaching Assistant (Aug 2019 - Present)
  - Supervisor: Assistant Professor Dr. Bahaa Ansaf
  - Tutoring, mentoring, and grading of classes & labs for bachelor's courses of *'EN 107: Engineering Graphics'*, SOLIDWORKS, and *'EN 211: Engineering Mechanics'*.
  - Volunteering academic exhibitions.

  Teaching Instructor (Aug 2020 – Jan 2021)
  - Lecturing, mentoring, monitoring and grading of undergraduate classes, and labs of *'EN 101: Introduction to Engineering'*.

  Independent Researcher: Special Topic Coursework (Aug 2020 – Jan 2021)
  - Conducted research to build an efficient prediction model for the patients' length of stay in a hospital.
  - Solved the problem with techniques of data science, natural language processing and neural networks.

✓ **Morang Auto Works (MAW) Earthmovers Private Limited, Kathmandu, Nepal.**
  Sales Engineer (Nov 2017 – Jan 2019)
  - Analyzed sales data for planning purpose with Data Analysis, Statistical Analysis and Operations Research techniques.
  - Worked as a technical sales representative to promote the business and boost client relationship.
  - Organized and participated in multiple business expos.
  - Collaborated with and led the team of sales executives to build and deliver the plan effectively.
  - Main tools used are MS Dynamics NAV (ERP), TABLEAU, SQL and MS Excel.

PUBLICATIONS

- Bhattarai, S., Wollega, E. (2020). A 0/1 Knapsack Problem to Optimize Shopping Discount under Limited Budget. *5th North American IEOM Society International Conference.*
- Bhattarai, S., Correa-Martinez, Y., Wollega, E., Bedoya-Valencia, L. (2020). Building a Prediction Model for Forecasting Adult Care Facility Quarterly Patient Demand. *5th North American IEOM Society International Conference.*

COMPUTER SKILLS

- Programming: **Python** (Advanced skills on Data Science, Machine Learning and Deep Learning), **MATLAB, Octave**, **C.**
- Engineering Design: **AutoCAD**, **SOLIDWORKS.**
- Optimization: **Gurobi (**Advanced skills on linear optimization and integer programming), **Cplex, LINGO.**
- Data/Visualization: **SQL, Minitab, TABLEAU.**
- Simulation: **Arena** (Advanced), **Simio.**
- Web: **HTML/CSS**
- Documentation: **LaTeX**

PROFESSIONAL SKILLS (boosted by professional experience)

- Communication:
  Excellent in both written and oral communication
- Great interpersonal skills
- Good leadership quality
- Excellent analytical insight
- Multitasking
- Time management
- Teamwork

LANGUAGE

- English:
  Very good in reading/writing. Good in speaking.
- Nepali:
  Fluent