

Raju Thapa, EIT

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Education

PhD, Civil Engineering (Transportation Engineering) Jan. 2015 – Present
Iowa State University, Ames, IA
Tentative graduation date: August 2018

Master of Science, Civil Engineering (Transportation Engineering) 2012-2014
Louisiana State University and Agricultural & Mechanical College,
Baton Rouge, LA

Bachelor of Science, Civil Engineering 2002-2006
Institute of Engineering, Western Region Campus, Nepal

Research Interests

- Traffic Safety
- Traffic Planning
- Traffic Operation
- Driving Behavior
- Low Cost Traffic Safety Measures
- Distracted Driving
- Intelligent Transportation System

Teaching Experience

Teaching Assistant, Louisiana State University

Principles of Highway and Traffic Engineering Fall 2013

- Graded assignments
- Assisted students in office hours
- Assignment preparation
- Midterm and Final exam preparation

Plane Surveying and Measurement Fall 2014

- Graded assignments and lab reports
- Assisted students both in office and field
- In charge of survey lab office
- Prepared assignments and exams

Teaching Experience (Continued)

Lecturer, Institute of Engineering, Western Region Campus, Nepal
(www.wrc.edu.np)

2006-2012

- Lectured following courses at undergraduate and diploma level
 - Undergraduate level
 - Transportation Engineering I (Introduction to Transportation system, Highway Planning, Geometric Design, Highway Drainage, Hill Roads, and Highway Materials)
 - Transportation Engineering II (Traffic Safety, Fixed Time Traffic Signal Design, Traffic Management, Traffic Light Design, Pavement Design)
 - Estimating & Costing and Engineering Drawing
 - Diploma level
 - Highway Engineering (Introduction, Geometric Design, Highway Material, Highway Drainage, Basic Pavement Design)
 - Engineering Drawing (not using AutoCAD)
- Conducted practical on Civil engineering materials, Traffic studies (Traffic Volume and Speed), Highway Project (Detail survey of road alignment, detail cost estimate and simple pavement design)
- Graded assignments
- Prepared final and terminal exams
- In charge of surveying and instrumentation practical / lab
- In charge of final projects for undergraduate student

Research Experience

Graduate Research Assistant, Iowa State University, Ames, Iowa

2015-Present

Evaluation of Intersection Conflict Warning System- Phase I [Final Report](#)

- Data collection: Moving, setting trailers at site
- Data reduction: Design methodology for data reduction, supervision of reduced data
- Data analysis: Detail Statistical Analysis
- Report writing

Evaluation of long truck and farmer vehicles at Reduced Conflict Intersection [Final Report](#)

- Data collection: Moving, setting trailers at site
- Data reduction: Design methodology for data reduction, supervision of reduced data
- Data analysis: Detail Statistical Analysis
- Report writing

Evaluating Rural Intersection Stopping Behavior using SHRP2 Naturalistic Driving Study Data

- Site selection using ArcGIS
- Data reduction: Gap, Braking distance, Stopping behavior
- Statistical Analysis: Stopping behavior of vehicles at minor approach
- Result and discussion on statistical analysis

Research Experience (Continued)

Road Diet: Analysis of Bike and Pedestrian Crashes

- Identifying treatment sites
- Projection of selected sites at ArcGIS to select suitable control sites
- Bike and pedestrian crash data collection
- Analysis and arrangement of documents in chronological order

Evaluation of Rural Intersection Treatments

- Data Collection: Moving, setting trailers at sites
- Development of data reduction methodology

Evaluation of Work-Zone Safety Using SHRP 2 Naturalistic Driving Study Data

- Status: Currently working

Evaluation of Intersection Conflict Warning System-Phase II

- Status: Currently working

Graduate Research Assistant, Louisiana State University, Baton Rouge, Louisiana 2012 - 2014

History of Road Design Standards in Louisiana DOTD

- Identifying national and state road design standards adopted in Louisiana over last 90 years
- Collection of the available documents from possible sources
- Analysis and arrangement of documents in chronological order
- Preparation of a document library for easy access to the public

Driver Distraction and its Associated Crash Risk [Final Report](#)

- Detail literature review
- Experimental set up and operation of the driving simulator
- Run the overall tests using participants and collection of the data from the simulator
- Management of simulator data for statistical analysis
- Statistical analysis
- Part of report writing

Real Time Driver Information for Congestion Management [Final Report](#)

- Writing literature review on past and current research studies on Data Collection, Data Screening, Information Dissemination, Driver Behavior and Active Traffic Management Strategies to get real traffic information system
- Part of report writing

Publication

Thapa, R., Codjoe, J., Ishak, S., and McCarter, K.S. Post and During Event Effect of Cell Phone Talking and Texting on Driving Performance - A Driving Simulator Study. *"Traffic Injury Prevention"*, September 2014.

Peer Reviewed Conference Papers

Thapa, R., Hallmark, S., Hawkins, N., and Knickerbocker, S. Evaluation of Intersection Conflict Warning System: A Critical Gap Analysis". 97th Annual Meeting of Transportation Research Board, Jan.7-11, D.C., 2018.

Hallmark, S., Hawkins, N., **Thapa, R.**, and Knickerbocker, S. Evaluation of Truck and Agricultural Vehicle Behavior at Reduced Conflict Intersections. Road Safety & Simulation International Conference 2017. 17 - 19 Oct. 2017.

Thapa, R., Codjoe, J., Ishak, S., and McCarter, K.S. Investigating the Protracted Effect of Cell Phone Use on Distracted Driving. *94th Annual Meeting of Transportation Research Board*, Jan.11-15, D.C., 2015.

Thapa, R., Codjoe, J., and Ishak, S. During and After Event Effect of Cell Phone Usage-A Driving Simulator Study. *93rd Annual Meeting of Transportation Research Board*, Jan.12-14, D.C., 2014.

Presentations

Thapa, R., Hallmark, S., Hawkins, N., and Knickerbocker, S. "Evaluation of Truck and Agricultural Vehicle Behavior at Reduced Conflict Intersections (Restricted Crossing Intersection)". Graduate Student Research Summaries in Geometric Design. 97th Annual Meeting of Transportation Research Board, Jan.7-11, D.C., 2018 (Poster Presentation).

Thapa, R. "Literature Review on change point models and its application on analyzing driving behavior using SHRP 2 Naturalistic Driving data". Graduate Poster Competition 2017 at Iowa State University. November 29, 2017 (Poster Presentation).

Thapa, R., Hallmark, S. "Evaluation of Intersection Conflict Warning System (ICWS)". Twelfth Mid-Continent Transportation Research Symposium | August 16–17, 2017, Ames, Iowa (Poster Presentation).

Thapa, R. "Spatial Distribution of Distracted Driving Crashes in Des Moines area MPO". Mid-Continent Transportation Research Symposium, Madison, 2016 (Poster Presentation).

Thapa, R., Hallmark, S., Hawkins, N., and Knickerbocker, S. "Evaluation of Truck and Agricultural Vehicle Behavior at Reduced Conflict Intersections". Graduate Poster Competition 2015 at Iowa State University. November 30, 2016 (Poster Presentation).

Oneyear, N., **Thapa, R.**, Hallmark, S, and Smadi, O. "Evaluating Driver Braking and Stopping Behavior at Rural Intersections using SHRP 2 Naturalistic Driving Study Data". Fifth International Symposium on Naturalistic Driving Research. August 30-September 1, 2016.

Major Classes Attended

Transportation Planning

- Urban Transportation Policy and Planning
- Landuse Planning and Development
- Transportation Planning and Modeling

Traffic Operation

- Traffic Operation and Control
- Traffic Safety, Operations, and Maintenance

Transportation Data Analysis

- Transportation Engineering Data collection
- Transportation Data Analysis

Geographic Information System

- Introduction to Geographic Information System
- Geographic Data Management
- GIS Program and Automation

Statistics

- Statistical Method for Research
- Experimental Statistics
- Multivariate Statistical Analysis
- Applied Categorical Data Analysis
- Applied Time Series

Others

- Fundamental of Pavement Design
- Pavement Materials Characterization
- Transportation System Development and Management
- Special Topics on Human Factors and Driving Simulators

Computer Skills

- Geographic Information System: ArcGIS, GeoDA
- Statistics: JMP, SAS, SPSS, R, NLOGIT
- Modeling and Visualization: VISSIM, TransCAD, AutoCAD
- Programming languages: Python

Certifications and Trainings

- Road Design Software, Western Region Campus, Nepal, 2010
- Engineer - in- Training (EIT), Board of Professional Engineers and Land Surveyors, Texas
- "Introduction to VISSIM" by PTV Group at Orland, Florida, February 1-2, 2016
- "Advanced Training in VISSIM" by PTV Group at Institute for Transportation, Ames, Iowa, August 23, 2017

Honors and Awards

- Travel Scholarship, CCEE Graduate Student Council, Iowa State University, 2016
- GPSS Professional Advancement Grant, Iowa State University, 2016
- Travel Scholarship, Transportation Student Association, Iowa State University 2016

Honors and Awards (Continued)

- Graduate Student Travel Award, Louisiana State University

Professional Membership

- Institute of Transportation Engineers (Member ID: 1049049)
- Transportation Student Association, Iowa State University
- American Society of Civil Engineers (Member ID: 9821772)
- Nepal Engineering Council- Engineering Council no - 4485 CIVIL'A'.
- Nepal Engineering Association- Engineering Association No. -7734.