AFM NURUN NABI

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EDUCATION

Louisiana State University Baton Rouge, LA
MSCE, Civil Engineering December 2012
Research: *Development of a Performance Based Specification for Louisiana Asphalt Concrete*

Bangladesh University of Engineering and Technology Dhaka, Bangladesh
B.Sc in Engineering, Civil Engineering March 2009

RESEARCH EXPERIENCE

University of Alabama Tuscaloosa, AL
Research Collaboration with Dr Mizanur Rahman (January 2024 – Present)

- Conducted comprehensive literature reviews on quantum computing, Connected Automated Vehicle systems, and cybersecurity, synthesizing current research and identifying key trends and gaps.
- Investigated cybersecurity frameworks relevant to quantum computing and Connected Automated Vehicle environments, assessing potential threats and mitigation strategies for secure information transfer.
- Explored applications of quantum machine learning and quantum cryptography to enhance data security, communication efficiency, and intelligent decision-making in connected vehicle systems.

This a collaborative research effort. I worked with Dr. Mizanur Rahman and his PhD student Kazi Hassan Shakib. I am not a graduate student at University of Alabama.

Louisiana State University Baton Rouge, LA
Graduate Research Assistant, Civil Engineering (January 2011 – December 2012)

- Developed a performance-based specification framework for Hot Mix Asphalt Concrete (HMAC) for the Louisiana Department of Transportation and Development (LaDOTD), enhancing evaluation methods for pavement materials.
- Conducted comparative analyses of physical and mechanical properties of asphalt concrete, informing improvements in material selection and mix design.
- Performed laboratory testing including Indirect Tensile Strength (ITS), Semi-Circular Bending (SCB), Loaded Wheel Deflection (LWD), and additional standard asphalt tests to assess performance characteristics.
- Proposed a comprehensive framework for performance-based specifications, integrating lab test results and material behavior to support durable and cost-effective pavement design.
- Prepared technical reports, presentations, and recommendations to communicate findings and support future pavement performance evaluation strategies.

LICENSE

Texas Board of Professional Engineers and Land Surveyors
PE # 138645
Michigan State Board of Professional Engineers
PE # 2601070007

SKILLS

Connected Vehicle, Cybersecurity, ITS, Traffic Impact Analysis, Traffic Simulations, Roadway Design, GIS, Machine Learning

NOTABLE PROJECTS

- Connected Automated Vehicle Cybersecurity in respect to Quantum Computing
- Traffic Impact Analysis for Proposed Development near Spring Stuebner and W Hardy, Spring, Texas
- Traffic Impact Analysis for Proposed Development near SH 6 and County Road 48, Manvel, Texas
- Traffic Impact Analysis for Proposed Development near SH 149 N of Heritage Road, Magnolia, Texas
- Traffic Impact Analysis for Proposed Development near SH 6 and Branch Forest, Houston, Texas
- Traffic Technical Memorandum for near NB FM 149 North of Heritage Drive
- Traffic Technical Memorandum for near Wilcrest Drive and Brandlon Drive
- Traffic Impact Analysis for Proposed C Store Development (Pause & Go) in Baytown, Texas
- Traffic Impact Analysis for Proposed C-Store Development near US 59 & Old Cold Spring Road, Cleveland, Texas
- Traffic Impact Analysis for Proposed C-store Development near FM 2090 & Westgate Road, Splendora, Texas
- Traffic Impact Analysis for Proposed C-store Development near SH 6 and CR 48
  Bammel Road Roadway widening
- Brazoria County Road 190 Bridge Approach Road Improvement
- NorthPointe Blvd Street Improvement
- SH 95 Highway Bridge Approach Road Improvement
- Dale Dell Street Sidewalk from Woodforest Road to Wallisville Street
- Project: North East Water Purification Project
- Shreveport Regional Bus Station
- Gray and Taft Street Paving and Drainage
- Ellington Field Airport
- Shreveport Regional Airport Taxiway “B” Pavement Design
- Gus Wortham and Mulford Area Sidewalk

CERTIFICATIONS

Machine Learning A-Z™ : Python & R in Data Science [2022]
Instructors: Kirill Eremenko, Hadelin de Ponteves

TRAININGS

- The Basics of Traffic Signal Timing
  Provider: Florida LTAP

- Traffic Signal Timing 101
  Provider: Florida LTAP

- ITS: what, why and how?
  Provider: FHWA National Highway Institute

- Improving Highway Safety with Intelligent Transportation Systems
  Provider: FHWA National Highway Institute

- Transportation Cybersecurity - NHI Course 137055
  Provider: FHWA National Highway Institute

- Introduction to Financial Planning for Transportation Asset Management
  Provider: FHWA National Highway Institute

- Temporary Traffic Control – Planning and Design
  Provider: Florida LTAP

- Signing, Pavment Markings and the MUTCD
  Florida Department of Transportation

- Americans with Disability Act (ADA) - Design of roadways, buildings, and facilities for accessibility for Americans with disabilities
  Provider: Mississippi Department of Transportation

- MicroStation
  Provider: Bentley

SKILLS

Traffic Impact Analysis, Traffic Simulations, Roadway Design, GIS, Machine Learning

SOFTWARE SKILLS

Synchro Studio, AutoCAD Civil 3D, MicroStation, OpenRoads Desinger, ArcGIS

PROFESSIONAL AFFILIATIONS

Member, Institute of Transportation Engineers
Member, Deep South Institute of Transportation Engineers

PROFESSIONAL EXPERIENCE

Midstream and Terminal Services Dhaka, Bangladesh
COO & Traffic and Roadway Engineer December 2023 – Present

As COO

- Led a team of 50 employees and aligned cross-functional operations with company goals, which improved collaboration and efficiency and built a high-performing organization.
- Partnered with the CEO to define and execute long-term strategy, translating vision into actionable KPIs and metrics that delivered consistent business growth.
- Drove revenue expansion by scaling operations and strengthening market execution, increasing profit from $1.5 million to approximately $5 million in two years, which significantly enhanced financial stability and market position.
- Oversaw daily operations across Production, Finance, HR, and IT, streamlining workflows and resource utilization to enhance company-wide efficiency.
- Monitored budgets, forecasts, and financial performance, implementing corrective actions on variances to ensure sustainable financial outcomes.
- Introduced process improvements and systems that reduced cycle times and improved output quality, resulting in faster and more reliable results.
- Structured hiring and talent development processes, including assessments and onboarding practices, which secured top talent and strengthened retention.
- Updated company policies to prioritize employee well-being while optimizing operations, fostering stronger employee engagement and reducing turnover.

As Traffic and Roadway Engineer

- Conduct traffic impact studies, traffic operations analyses, and safety assessments.
- Analyze traffic flow patterns using software such as **Synchro.**
- Design traffic control devices, including traffic signals, signing, striping, and intelligent transportation systems (ITS).
- Review and apply MUTCD, AASHTO, FHWA guidelines, and local/state traffic engineering standards.
- Develop and prepare roadway and highway design plan and profile, horizontal and vertical alignment, cross-sections, sidewalk, pavement marking using software such as MicroStation, AutoCAD Civil 3D, or OpenRoads.
- Assist with corridor studies, transportation planning.
- Prepare technical reports, memos, and presentation materials for clients.
- Coordinate with municipal agencies, DOTs, and other consultants.

IEA World Houston, TX

Project Engineer - Roadway February 2021 – September 2021

- Developed roadway design plans using MicroStation, AutoCAD Civil 3D, and OpenRoads to deliver accurate and efficient project designs for TxDOT and Harris County projects.
- Executed horizontal and vertical alignments, corridor modeling, and cross-section development to ensure optimal roadway geometry.
- Designed roadway elements including intersections, ramps, shoulders, curbs, drainage, pavement markings, and signage to meet safety and functionality standards.
- Prepared construction documents such as plan and profile sheets, typical sections, and detail sheets to support project delivery.
- Performed engineering calculations for earthwork, quantities, and cost estimates to provide precise project planning and budgeting.
- Coordinated with multidisciplinary teams—including traffic, structural, geotechnical, and environmental engineers—to ensure integrated project solutions.
- Assisted in preparing technical reports, design criteria, and feasibility studies to support decision-making and project approvals.
- Ensured compliance with local, state, and federal transportation standards as well as client requirements to maintain quality and regulatory adherence.
- Participated in QA/QC reviews of roadway design deliverables to validate accuracy and consistency.

IMS Engineers Houston, TX

Project Engineer July 2017 – January 2021

- Developed traffic impact studies, signal warrant analyses, and intersection capacity evaluations, which improved mobility, enhanced roadway safety.
- Designed traffic control plans, pavement marking layouts, and signage schemes that optimized traffic flow and ensured compliance with MUTCD and TxDOT standards.
- Develop and prepare roadway design plans using software such as MicroStation, AutoCAD Civil 3D, or OpenRoads for City of Houston, Harris County and TxDOT projects.
- Perform horizontal and vertical alignments, corridor modeling, and cross-section development.
- Design roadway elements such as intersections, shoulders, curbs, drainage, pavement markings, and signage.
- Prepare construction documents including plan and profile sheets, typical sections, and detail sheets.
- Conduct engineering calculations including earthwork, quantities, and cost estimates.
- Designed CMU buildings with steel beams, joists, and roof decks, providing durable and cost-effective structural solutions.
- Engineered retaining walls, vertical walls for detention ponds, and steel platforms, which improved site stability and supported long-term infrastructure resilience.

- Performed load calculations and structural analysis, ensuring safety, code compliance, and constructability of all structural components.
- Collaborated with architects, contractors, and project managers to integrate structural systems seamlessly into overall project designs, resulting in efficient construction execution.
- Delivered detailed structural drawings and specifications that reduced construction delays and ensured alignment between design intent and field implementation.

IMS Engineers Jackson, Mississippi
Engineer Intern January 2014 – June 2017

- Supported design efforts across roadway, drainage, airport, and building structural projects.
- Assisted in preparing construction drawings and specifications in accordance with local, state (MDOT), and FAA standards.
- Developed horizontal/vertical alignments, typical sections, and cross-sections using AutoCAD Civil 3D.
- Contributed to drainage system design, including culverts, stormwater layout, and runoff calculations.
- Provided support on building-focused structural design, including foundation plans, framing layouts, and load calculations.
- Collaborated with senior engineers to review plans for compliance with local codes and design standards.
- Participated in site visits and field inspections to verify existing conditions and document construction progress.
- Engaged in design and documentation for general aviation airport improvements, including taxiways and runway safety areas.
- Assisted in preparing permit applications, reports, and submittals for review by county and city agencies.

REFERENCES

Mizanur Rahman
University of Alabama
Assistant Professor, Department of Civil Engineering
Tuscaloosa, AL
mizan.rahman@ua.edu