

Hemal V. Patel

OBJECTIVE

To use my education and experience to help carry out Evelyn Ann Charter Institute's mission

EDUCATION

University of Texas Austin, TX
Master of Science in Structural Engineering August 2013
GPA: 3.92/4.0

University of Illinois Urbana-Champaign, IL
Bachelor of Science in Civil Engineering December 2010

Institut National Polytechnique de Lorraine Nancy, France
UIUC International Programs in Engineering Fellowship Jan. – July 2009

- All coursework (exams, labs, papers and homework) completed in French

Related software: AutoCAD, MicroStation V8, Sketchup, MatLab, Excel VBA, SAP2000, CSI Bridge, LARSA, TEDDS
Design specifications: experience with AASHTO LRFD, AISC SCM, ACI 318, TX, WI & IL DOT Bridge Manuals

EXPERIENCE

Parsons Corporation Chicago, IL
Associate Bridge Engineer, EIT July 2014 – Present

- Yosemite Slough Concept Design, San Francisco, CA
 - 370 ft. tied-arch main span with asymmetric ribs (in-plane) and inclined hangers
 - Optimized the shape of the ribs to minimize in-plane moments under dead load
 - Determined a preliminary post-tensioned tendon layout and calculated deck stress under service live loads
 - Analyzed structure for moments on the rib and deck caused by dynamic force from hanger rupture
- California High-Speed Rail – San Joaquin River Viaduct, Fresno, CA
 - Modeled the viaduct and analyzed substructure under earthquake and train live loads
 - Performed a rail-structure interaction study to evaluate track serviceability (stress, displacements, rotations, etc.)
 - Evaluated natural frequencies and mode shapes of the bridge to determine potential for resonance
 - Completed linear time history analysis with moving train load to determine impact factor of passenger train
- Northwest Corridor Design-Build, Atlanta, GA
 - Helped with design of continuous 5-span steel girder ramp bridge carrying WB I-285 to NB I-75
 - Analyzed substructure under horizontal loads and detailed pier reinforcement, incl. cap, column, and footing

Exp. Global, Inc. (formerly Teng and Associates, Inc.) Chicago, IL
Structural Engineer, EIT Aug. 2013 – Present

- IL-104 over Illinois River, Meredosia, IL
 - 2250 ft. long bridge with a 590 ft. steel-tied arch main span
 - Designed stub abutments, approach piers, main navigation piers, and modular expansion joints
 - Prepared CAD drawings of abutments, piers, modular expansion joints, and HLMR pot bearings
- Peterson Ridge Metra Station, Chicago, IL
 - Designed two-span commuter platform bridge, incl. deck, girders, splices, diaphragms, and bearings
 - Evaluated natural frequencies and mode shapes to determine potential for resonance under pedestrian traffic
 - Compiled structural calculations and drawings in two-week period as part of accelerated design schedule
- Rehabilitation of Elgin-O'Hare Expressway, Roselle, IL
 - Inspected substructure, girders, and deck of 10 bridges between Irving Park Rd. and U.S. 20
 - Produced bridge condition report and repair drawings for each bridge

University of Texas Austin, TX
Graduate Research Assistant Aug. 2011 – July 2013

- Evaluated the feasibility of strengthening older steel girder bridges with post-installed shear connectors
- Collaborated with project sponsor Texas DOT to identify state bridges eligible for strengthening
- Performed high-cycle fatigue tests on shear connectors; designed and constructed small-scale test setup
- Conducted a FEA on CSI Bridge; created VBA scripts to organize analytical and experimental data

Teng and Associates, Inc. (now Exp. Global, Inc.)

Structural Designer, EIT

Chicago, IL
Jan. 2011 – Aug. 2011

- Generated plans, quantities and construction specs for the rehabilitation of WI-42 over Sturgeon Bay, a 30 year old rolling lift bascule bridge in Sturgeon Bay, Wisconsin
- Developed substructure drawings for reconstruction of Juneau Ave. vertical lift bridge over Milwaukee River

HONORS & LEADERSHIP

Yura Research Prize

UT Austin Structural Engineering Dept. and Texas Structural Steel Institute

University of Texas
September 2013

- Named after Dr. Joseph A. Yura; annually awarded to a graduating structural engineering student whose thesis or dissertation demonstrates conciseness, clarity, and applicability to engineering practice

PCI Big Beam Competition, 1st Place Nationals

UT Austin Team Leader

University of Texas
Mar. 2012 – July 2012

- collaborated with 8 students to design, fabricate and test an efficient precast, P/S concrete beam
- produced a technical report and video that summarized the design, fabrication, and testing process

Thrust 2000 Graduate Fellowship in Engineering

Cockrell School of Engineering (CSE)

University of Texas
Aug. 2011 – July 2013

PROFESSIONAL & VOLUNTEER ORGANIZATIONS

Boys and Girls Club of America

Volunteer and Science Club Coordinator

Chicago, IL
Mar. 2014 - Present

- Co-created an after-school science club for 8-12 year old students at the Logan Square club
- Organized bi-weekly sessions which included experiments and discussions on various topics in physics, chemistry, and biology
- Examples include: spaghetti bridge building, light reflection/refraction with laser pointer, mirrors, and water; study of salt water, incl. closed circuit through salt water to demonstrate conductivity; Halloween themed experiments, such as slime with borax and glue, oozing pumpkin with hydrogen peroxide and yeast; study of dry ice, with demo called dry ice bubbles

Engineers without Borders

West Pullman Vacant Lots Initiative Team Member

Chicago, IL
Oct. 2015 - Present

- Approximately 20 percent of properties in West Pullman are vacant or abandoned
- EWB Team is collaborating with Habitat for Humanity to evaluate the viability of converting lots into usable space that will be positive for the West Pullman community
- Options to rehab abandoned/deteriorated buildings, convert empty lots into parks, urban farms, etc.

American Society of Civil Engineers – Structural Engineering Institute

Young Member

Chicago, IL
Nov. 2014 – Present

Hobbies and Interests: Various sports (incl. volleyball, golf, basketball, and tennis), reading, cooking, learning “dholak” (type of Indian drum), volunteering at math and science related events for students