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.)** Chicago, IL

 ***Structural Designer, EIT*** 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** University of Texas

***UT Austin Structural Engineering Dept. and Texas Structural Steel Institute*** 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** University of Texas

***UT Austin Team Leader*** 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** University of Texas

***Cockrell School of Engineering (CSE)*** Aug. 2011 – July 2013

PROFESSIONAL & VOLUNTEER ORGANIZATIONS \_\_\_\_\_\_\_\_\_\_\_\_\_

**Boys and Girls Club of America** Chicago, IL

***Volunteer and Science Club Coordinator*** 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** Chicago, IL

***West Pullman Vacant Lots Initiative Team Member*** 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** Chicago, IL

***Young Member*** 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