

# AFSHIN HATAMI, Ph.D., P.E., PMP

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## Areas of Expertise

- Digital Twins ● Bridge Information Modeling (BIM) ● Infrastructure Project Management ● Bridge Engineering ● Structural Analysis and Design ● Product Development ● Leadership and Team Development ● Collaborative Stakeholder Engagement ● Problem Solving ● Coaching and Mentoring
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## CERTIFICATION

**Licensed Professional Civil Engineer (P.E)**, State of California and Florida  
**Project Management Professional (PMP)**, Project Management Institute (PMI)  
**Pragmatic Marketing Certified**, Pragmatic Marketing  
**Competent Communicator (CC)**, Toastmasters International

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## Education

- **Post-Doctoral Research Associate**, University of Nebraska, Lincoln, NE, MAR 2014-DEC 2014
  - **Ph.D. Construction Engineering**, University of Nebraska, Lincoln, NE, JAN 2010-MAR 2014
    - Thesis: Design of shear connectors for precast concrete decks in concrete girder bridges
  - **M.Sc. Structural Engineering**, Uremia University, Uremia (2004)
  - **B.S. Civil Engineering**, Razi University, Kermanshah (2000)
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## ACADEMIC APPOINTMENTS

**ASSISTANT PROFESSOR**, Mississippi State University, MS, AUG 2021-PRESENT

- Building Construction Science Department: Instructed the following courses.
  - Studio V (BCS 4116/4990)
  - Studio VI (BCS 4126/4990)
  - Professional Communication & Practice (BCS 4222)
  - Structure I (BCS 3904)

**POST-DOCTORATE RESEARCH ASSOCIATE**, University of Nebraska, Lincoln, MAR 2014-DEC 2014

- Constructed full precast prestressed bridge deck panels and compared the FEM analysis with experimental results in the lab for shear interface behavior evaluation funded by National Cooperative Highway Research Program (NCHRP)

**RESEARCH ASSISTANT**, University of Nebraska, Lincoln, JAN 2010-MAR 2014

- Set up deterioration models and performed life-cycle cost analysis (LCCA) for bridges in the state of Nebraska funded by the Nebraska Department of Roads (NDOR)
- Evaluated the design and construction challenges of using 0.7 in. diameter strands in pre-tensioned concrete bridge girders funded by the Nebraska Department of Roads (NDOR)
- Implemented full precast, prestressed concrete girder, and new deck panel system in bridge projects.
- Instructed the following courses as a teaching assistant:
  - Prestressed Concrete Design
  - Introduction to Bridge Engineering
  - Construction Estimating
  - Strength of Materials
  - Reliability of Structures

**ASSOCIATE DIRECTOR**, Kermanshah Azad University, Kermanshah, NOV 2008 – DEC 2009

- Civil Engineering Department, 22 Faculty Members with More than 800 undergraduate students
  - Strategic Planning and Development:

- Contributed to driving strategic initiatives aligned with the civil engineering department's mission.
  - Actively participated in the development and execution of the university plans.
- Administrative Oversight:
  - Supervised day-to-day operations, fostering a collaborative and efficient work environment.
- Curriculum Management:
  - Actively engaged with esteemed faculty to develop and refine curriculum offerings.
- Student Advising and Support:
  - Oversaw comprehensive advising and support services for each student.
  - Addressed student concerns and facilitated mentorship opportunities.

**INSTRUCTOR**, Kermanshah Azad University, Kermanshah, May 2004 – DEC 2009

- Civil and Architectural Engineering Departments: Instructed the following courses.
  - Construction Estimating and Scheduling (CIVE 3280)
  - Introduction to Steel Structure (AE 3390)
  - Steel Structure Design I (CIVE 3380)
  - Steel Structure Design II (CIVE 4390)
  - Structural Analysis I (CIVE 3340)
  - Structural Analysis II (CIVE 4350)
  - Introduction to Concrete Structure (AE 3490)
  - Concrete Structure Design I (CIVE 3360)
  - Concrete Structure Design II (CIVE 4370)
  - Statics (CIVE 2120)
  - Mechanics of Materials (CIVE 2130)

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**PROFESSIONAL EXPERIENCE**

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**MANAGER OF PRODUCT MANAGEMENT**, Bentley Systems, Sunrise, FL, Dec 2019-Aug 2021

- Oversaw the development of Bentley OpenBridge products using Bridge Information Modeling (BIM) for Digital Twins (DT) to enrich the bridge 3D models with intelligent information through the life cycle of projects from design to construction and inspection.
- Led and developed a team of four product managers, fostering professional growth and maximizing contributions.
- Orchestrated strategic management of the Bentley OpenBridge product portfolio, prioritizing projects, and aligning resources.
- Crafted and communicated compelling product strategy and maintained a comprehensive product roadmap.
- Identified potential risks and devised contingency plans for seamless product development and execution.
- Aligned product management endeavors with overarching Bentley iTwin strategies for organizational success.

**PRODUCT MANAGER**, Bentley Systems, Sunrise, FL, Jan 2015-Dec 2019

- Performed the following activities for the Bentley RM Bridge product.
  - Product Strategy and Vision:
    - Defined and executed comprehensive product strategies, aligning with organizational objectives and market demands.
  - Market Research and Analysis:
    - Conducted in-depth market research to identify customer needs, analyzed market trends, and evaluated competitor offerings to inform product decisions.
  - Product Roadmap:
    - Developed and maintained a robust product roadmap, outlining key features, enhancements, and updates throughout the product's lifecycle.
  - Requirements Definition:

- Collaborated with stakeholders, customers, and development teams to gather and prioritize product requirements, ensuring alignment with business goals.
- User Experience (UX) and User Interface (UI) Design:
  - Led UI/UX design efforts, ensuring the creation of intuitive interfaces and a seamless user experience.
- Development Oversight:
  - Provided leadership to cross-functional development teams, ensuring on-time and high-quality delivery of features and updates.
- Release Management:
  - Orchestrated product releases, including coordinating marketing efforts, documentation, and support readiness.
- Metrics and KPIs:
  - Defined and tracked key performance indicators (KPIs) and metrics, utilizing data-driven insights to guide product decisions.
- Stakeholder Communication:
  - Effectively communicated product updates, progress, and roadmaps to internal teams, stakeholders, and customers.
- Customer Feedback and Support:
  - Actively gathered and integrated customer feedback to enhance the product, collaborating closely with support teams to address customer needs.
  - Supported client issues in various bridge projects worldwide, including:
    - ✓ Gordie Howe International Bridge (GHIB) - designed by AECOM: GHIB will be the longest cable-stayed bridge in America.
    - ✓ 1915 Canakkale Bridge - design by Aas-Jakobson: the 1915 Canakkale Bridge will be the longest Suspension bridge in the world.
    - ✓ Chacao Bridge – designed by ARUP: Chacao Bridge is the longest Suspension bridge in South America.

**SENIOR PROJECT MANAGER**, Kermanshah Oil Refinery Company, Kermanshah, JUNE 2003 – DEC 2009

- Performed project management activities for a recently built seismically inadequate steel building, masonry office buildings, vessels, and pipelines support in seismic vulnerability and subsequent retrofits of the oil refinery.
- Managed the engineering team and resources and maintained relationships with clients, designers and consultants.
- Conducted project planning, budget approvals, resource, and timeline creation throughout projects.
- Approved the final design sketches and contractor's Trade Contract Payment applications.
- Conducted price estimations and negotiations for materials and labor and drafted binding contracts
- Participated in site meetings along with contractors' lead engineers to measure progress, mitigate issues, and direct activities.

**PROFESSIONAL DESIGN ENGINEER**, PARSIEH ENGINEERING DESIGN OFFICE, KERMANSHAH, JUNE 2003- DEC 2009

- Performed the following activities for the design of residential and commercial buildings in a range of 4 to 7 stories made with concrete and steel materials in a high seismic zone.
  - Seismic Analysis and Design:
    - Conducted rigorous seismic analysis using advanced software tools and codes tailored for high seismic zones.
    - Designed structural elements (beams, columns, shear walls) to effectively withstand seismic forces, ensuring occupant safety.
  - Foundation Design:
    - Engineered robust deep foundations, including piles, to guarantee stability in potentially liquefiable soils during seismic events.
    - Executed comprehensive bearing capacity and settlement analyses for shallow foundations.
  - Reinforcement Detailing:

- Provided meticulous reinforcement drawings specifying steel bar size, spacing, and configuration in concrete elements.
- Ensured all reinforcement detailing met or exceeded local building codes and stringent seismic design requirements.
- Material Selection and Specifications:
  - Expertly selected high-strength concrete and steel materials meeting or surpassing seismic design criteria.
  - Specified precise quality control measures for concrete curing, steel fabrication, and construction practices.
- Collaboration with Geotechnical Engineers:
  - Worked closely with geotechnical engineers to assimilate site-specific soil data and incorporate recommendations into the structural design.
- Construction Supervision and Quality Control:
  - Conducted frequent on-site visits to monitor construction progress and ensured adherence to the approved design.
  - Performed rigorous quality control checks on concrete pours, reinforcement installation, and steel connection welding.

**PROJECT MANAGER**, Rahsazan-E-Bisotoon Construction Company, Kermanshah, June 2001- June 2003

- Conducted construction cost estimation and prepared bid packages for several projects including a high-school building and bridge rehabilitation projects in which the company was in charge as the main contractor.

**PROJECT ENGINEER**, Staje Consulting Civil Engineers Company, Kermanshah, JANUARY 2000- JUNE 2001

- Oversaw project team in the design and construction of a 108-unit multi-story residential apartment complex.
- Coordinated activities from the blueprint phase to completion while managing materials selection, cost estimates, and team activities.

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**External Research Grant**

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1. Experimental and Numerical Modeling of Pressure Grouted Helical Piles for Application in Louisiana Subsurface Soils.
  - Sponsor: Louisiana Board of Regents, ITRS program 2023-2024
  - Role on Project: Consultant - a collaboration with Louisiana State University, McNeese University, and APC Construction LLC
  - Project Duration: 2024/2027
  - \$315,000 (Pending)
2. Development of innovative concepts to enhance camouflage capabilities.
  - Sponsor: The United States Air Force and the Department of Defense (DoD)
  - Role on Project: CO-PI - collaboration with Pikus3D
  - Project Duration: 2023/2024
  - \$110,000 for Phase I (Pending)

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**Internal Research Grant**

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1. Use of Immersive Technologies in Construction Education.
  - Sponsor: Mississippi State University CAAD Catalyst Grant
  - Role on Project: PI
  - Project Duration: 2022/2023
  - \$3,000 (Awarded)
2. AU Conference - Digital Twin Focus.
  - Sponsor: Mississippi State University CAAD Matching Expense for Research
  - Role on Project: PI
  - Project Duration: 2023
  - \$1,000 (Awarded)

3. Digital Twin Integration for Construction Project Management: A Case Study on Modular Home Construction
  - Sponsor: Mississippi State University CAAD Catalyst Grant
  - Role on Project: PI
  - Project Duration: 2023/2024
  - \$3,000 (Pending)
4. Digital Twin Integration for Construction Project Management: A Case Study on Modular Home Construction
  - Sponsor: Mississippi State University Creative/Research Experience for Undergraduates (C/REU)
  - Role on Project: PI
  - Project Duration: 2023/2024
  - \$1,250 (Awarded)

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### Journal Publications

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1. **Hatami, A.**, Rosti, F., and Mabrich, A. "Technology and Challenges in Use of Bridge Information Modeling (BIM) for Digital Twin in Bridges", will be submitted to the Journal of Built Environment Project and Asset Management (BEPAM), 2023.
2. Morcou, G., **Hatami, A.**, and Jaber, F. "A New Precast Concrete Deck System for Accelerated Bridge Construction", Journal of Advances in Civil Engineering Materials, ASTM International, 7(3), 2018.
3. **Hatami, A.**, and Morcou, G. "Deterministic and Probabilistic Life-Cycle Cost Assessment: Applications to Nebraska Bridges", American Society of Civil Engineers (ASCE) Journal of Performance of Constructed Facilities, 29, 2015.
4. Morcou, G., Assad, S., **Hatami, A.**, and Tadros, M. K., "Implementation of 0.7 in. diameter prestressing strands at 2 in. spacing in bridge girders", Journal of Precast/Prestressed Concrete Institute, PCI, 2013.
5. Morcou, G., **Hatami, A.**, Maguire, M., Hanna, K., and Tadros, M. K., "Mechanical and Bond Properties of 18 mm (0.7") Diameter Prestressing Strands", American Society of Civil Engineers (ASCE) Journal of Materials in Civil Engineering, 24(6), 735-744, 2012.
6. **Hatami, A.**, and Morcou, G., "Developing Deterioration Models for Life-Cycle Cost Analysis of Nebraska Bridges", Journal of Transportation Research Record (TRR), 2313, 3-11, 2012.

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### Conference/Workshop Publications

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1. **Hatami, A.** "A Real-Time Digital Twin Approach for Monitoring and Improving Modular House Construction", Submitted to the American Society of Civil Engineers (ASCE) International Conference on Computing in Civil Engineering, Pittsburgh, PA, 2024.
2. **Hatami, A.** and Rokooei, S. "The effect of internships and co-ops on preparing construction students for the changing demands and trends of the industry", Submitted to the Canadian Society for Civil Engineering (CSCE) 2024 Annual Conference, Niagara Falls, ON, 2024.
3. **Hatami, A.**, "Use of iTwin Technology in Construction", Presented by the Engineers' Society of Western Pennsylvania, International Bridge (IBC) Conference, IBC W05 Workshop, National Harbor, MD, 2023.
4. Morcou, G., and **Hatami, A.** "Developing Deterioration Models for Life-Cycle Cost Analysis of Bridges", American Concrete Institute (ACI) Convention, San Francisco, CA, USA, 2023.
5. **Hatami, A.** "Digital twins for infrastructure projects", Four hours online International Scientific Workshops, Razi University Civil Engineering Department, Virtual, 2022.
6. Rokooei, S., Garshasby, M., and **Hatami, A.**, "Cross Review of Collaboration in a Design-Build Studio", 129th Annual Conference & Exposition. American Society for Engineering Education, Minneapolis, Minnesota, MN, 2022.
7. **Hatami, A.**, and Mabrich, A., "Application of 3D Bridge Information Modeling in the Life-cycle of Bridges", The International Association for Bridge and Structural Engineering (IABSE), New York, NY, 2019.

8. **Hatami, A.**, and Pathak, R., “Hybrid Analytical Modeling of Bridge Structures: An Innovative Approach”, The International Association for Bridge and Structural Engineering (IABSE), Nantes, France, 2018.
9. Pathak, R., **Hatami, A.**, and Bhide, S., “Wind Buffeting in Time Domain Analysis of Long-Span Bridges using RM Bridge”, The International Association for Bridge and Structural Engineering (IABSE), Vancouver, Canada, 2017.
10. Papinutti, M., Bruer, A., Marley, M., Kvaleid, J., **Hatami, A.**, Pathak, R., and Bhide, S., “A frequency domain tool for investigation of wind response of TLP suspension bridges”, The International Association for Bridge and Structural Engineering (IABSE), Vancouver, Canada, 2017.
11. **Hatami, A.** et al, Young Engineers Workshop “Bridge Dynamic Response by Design”, The International Association for Bridge and Structural Engineering (IABSE), Held Sep 20, 2017, at Vancouver, Canada.
12. **Hatami, A.**, and Morcou, G., “Life Cycle Cost Assessment for Bridge Management: An Application to Nebraska Bridges”, The American Society of Civil Engineers (ASCE), International Conference on Computing in Civil and Building Engineering ICCCB, Orlando, FL, 2014.
13. **Hatami, A.**, and Morcou, G., “Developing Deterioration Models for Life Cycle Cost Analysis Of Nebraska Bridges”, 91st Annual Meeting of the Transportation Research Board (TRB), Washington, DC, 2012.
14. **Hatami, A.**, and Morcou, G., “Life Cycle Cost Analysis of Replacing Deteriorated Expansion Joints - A Case Study of an Existing Highway Bridge in the State of Nebraska”, The 2nd annual Student Capstone & Research Conference in Engineering, Information Science and Technology, Omaha, April 2012.
15. **Hatami, A.**, Morcou G., Hanna K. E., Tadros, M. K., “Evaluating the Bond of 0.7 in. Prestressing Strands for Concrete Bridge Girders”, Proceeding of the 90th Annual International Meeting of Transportation Research Board (TRB), Washington D.C., USA, Jan 2011.
16. Lashgari, M., **Hatami, A.**, and Norton, T. R., “Flexural Reliability Analysis of NU Girders”, Precast/Prestressed Concrete Institute (PCI) Convention and National Bridge Conference, Salt Lake City, UT, Oct 2011.
17. **Hatami, A.**, and Morcou, G., “Job-Built Insulated Concrete Forms (ICF) for Building Construction”, Proceeding of the 47th Associated Schools of Construction (ASC) Annual International Conference, Omaha, Neb., April 6 – 9, 2011.

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### Technical Reports

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1. Papinutti, M., **Hatami, A.**, Pathak, R., and Bhide, S., “Wind Buffeting in Time Domain in RM Bridge”, Final Report, Bentley Systems Inc, Sunrise, FL, USA, Aug 2016.
2. Morcou, G., and **Hatami, A.**, “Evaluating the Constructability of NUDECK Precast Concrete Deck Panels for Kearney Bypass Project”, Final Report, Project Number SPR-P1 (13) M336, Nebraska Department of Roads (NDOR), Feb 2015.
3. Morcou, G., and **Hatami, A.**, “Implementation of Precast Concrete Deck System NUDECK (2nd Generation)”, Final Report, Project Number SPR-P1 (13) M323, Nebraska Department of Roads (NDOR), November 2013.
4. **Hatami, A.**, and Morcou, G., “Life Cycle Cost Assessment of Nebraska Bridges”, Final Report, Project Number SPR-P1 (12) M312, Nebraska Department of Roads (NDOR), November 2012.
5. **Hatami, A.**, and Morcou, G., “Developing Deterioration Models for Nebraska Bridges”, Final Report, Project Number SPR-P1 (11) M302, Nebraska Department of Roads (NDOR), May 2011.

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### Scientific Committee Services

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- **Reviewer**, Journal of Built Environment Project and Asset Management (BEPAM), 2023
- **Reviewer**, Construction Research Congress (CRC), 2023
- **Reviewer**, Associated School of Construction (ASC), 2023
- **Evaluator**, Associated School of Construction (ASC), International Outstanding Researcher Award, 2022
- **Member**, International Association for Bridge and Structural Engineering (IABSE) Task Group 3.1

Super Long Span Bridge Aerodynamics, 2017-2022

- **Reviewer**, International Bridge Conference (IBC), 2020
- **Reviewer**, International Association for Bridge and Structural Engineering (IABSE), 2017-2019
- **Reviewer**, The American Society of Civil Engineers (ASCE) ICCCBCE, 2014
- **Reviewer**, Precast/Prestressed Concrete Institute (PCI), 2013
- **Reviewer**, Transportation Research Board (TRB), 2011-2012

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### University Services

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- Mississippi State University – Building Construction Science Faculty Search Committee Chair, 2023-2024
- Mississippi State University - College of Architecture, Art, and Design (CAAD) Research Committee Member, 2022-Present
- Mississippi State University - College of Architecture, Art, and Design (CAAD) Study Abroad Task Force Member, 2022-Present
- Mississippi State University – Building Construction Science Department Curriculum Committee Member, 2021-Present
- Mississippi State University – Building Construction Science Director Search Committee Member, 2022-2023
- Mississippi State University – Building Construction Science Faculty Search Committee Member, 2021-2023
- Mississippi State University - College of Architecture, Art, and Design (CAAD) Diversity, Equity, and Inclusion Committee (DE&IC) Member, 2021-2022

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### LEADERSHIP & AFFILIATIONS

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- **Associated Schools of Construction (ASC)** (2021-Present)
- **Project Management Institute (PMI)** (2018-Present)
- **Member-American Concrete Institute (ACI)** (2010-Present)
- **Member-American Society of Civil Engineering (ASCE)** (2010-Present)
- **Member-Precast/Pre-stressed Concrete Institute (PCI)** (2010-2015)
- **Member-American Segmental Bridge Institute (ASBI)** (2016-2021)
- **Member-The International Association for Bridge and Structural Engineering (IASBE)** (2017-Present)
- **President-Peter Kiewit Institute-Graduate Students & Professionals Association**, Omaha, NE (2011-2012)
- **President-Sigma Lambda Chi-Chi III**, International Construction Engineering Honor Society (2012-2013)

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### HONORS & AWARDS

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- **The Outstanding Graduate Student Leadership Award**, University of Nebraska-Lincoln College of Engineering, 2014
- **The Graduate Scholarship** from the Nebraska Chapter of American Concrete Institute (ACI) - 2012
- **Best Presentation Award**, PKI Capstone Conference, 2012
- **Milton E. Mohr Fellowship**, University of Nebraska-Lincoln College of Engineering, 2011
- **UNL Recruitment Fellowship**, University of Nebraska-Lincoln, 2010-2014