

# Ulises D. Techera Ph.D.

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## ACADEMIC BACKGROUND

### University of Colorado at Boulder

Graduated: 2017

Ph.D. in Civil Engineering with emphasis in Construction Engineering and Management

*Dissertation: Fatigue in the Construction Industry*

Cumulative GPA: 3.94

Advisors: Dr. Matthew Hallowell

*Graduate Certificate in College Teaching*

### University of Colorado at Boulder

Graduated: 2017

M.S. in Civil Engineering with emphasis in Construction Engineering and Management

Cumulative GPA: 3.94

*Graduate Certificate in Project Management*

### Polytechnic University of Catalonia

Graduated: 2014

B.S. - M.S. in Civil Engineering

*Research Focus: Optimization of reinforced concrete frame design, using moment redistribution by means of genetic algorithms.*

Advisor: Dr. Jesús Bairán

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## PROFESSIONAL EXPERIENCE

### Assistant Professor of Teaching

2017 – Present

#### University of Colorado Boulder, CU/CMU Civil Engineering Partnership.

*Grand Junction, Colorado*

- Developed online and traditional courses
- Created construction courses
- Developed and taught civil engineering courses
- Lead new laboratory equipment plan.
- Assisted in faculty search committee.

### Project Manager

2016 – Present

#### Van Matre Construction LLC.

*Lafayette, Colorado*

- Primary contact with the client
- Evaluated client's needs, assessed project, recommended course of action
- Defined scope, calculated schedule and budget
- Wrote the contract, and closed agreement.
- Coordinated with engineers and other project team members
- Oversaw the project
- Closed the project

- Research Assistant**      **University of Colorado at Boulder**  
2014 – 2017      *Boulder, Colorado* – Fatigue in the construction industry
- Mentor, undergraduate and graduate research assistants
- Project Coordinator**      **Inver Gestion ISEAR S.L.**  
2008 – 2010      *Barcelona, Spain*
- Coordinated projects in Conceptual Design, Schematic Design, Construction Documents, and Closeout.
  - Provided construction materials to the work site
- Craft Worker**      **COAXIAL PROYECTOS INNOVADORES S.L.**  
2006 – 2008      *Barcelona, Spain*
- Plumber
  - Electrician

## TEACHING EXPERIENCE

- University of Colorado at Boulder, CMU/CU Civil Engineering Partnership**      **Instructor of record**  
CVEN 3246 – *Introduction to Construction, (3 credits, undergraduate Junior. Level)*      Fall 2018
- Through this course students become familiar with the main players and entities involved in the construction process. Additionally, they learn to budget and schedule simple construction projects while considering major risks and safety. Lastly, the students learn the most relevant engineering economics concepts.
- University of Colorado at Boulder, CMU/CU Civil Engineering Partnership**      **Instructor of record**  
CVEN 3525 – *Structural Analysis, (3 credits, undergraduate Junior. Level)*      Fall 2018
- Through this course students learn to calculate the principal stresses and deflection experience by structures.
- University of Colorado at Boulder, CMU/CU Civil Engineering Partnership**      **Instructor of record**  
ENGR 140 – *Engineering Projects, (3 credits, undergraduate Freshman. Level)*      Spring 2018
- Project-based course that exposes students to basic concepts of project management and leadership. Students complete two projects throughout the course and they present them to the community in a showcase.
- University of Colorado at Boulder, CMU/CU Civil Engineering Partnership**      **Instructor of record**  
ENGR 236 – *Mechanics of Solids, (3 credits, undergraduate Sophomore. Level)*      Spring 2018
- Addresses concepts of stress and strain; material properties, axial loading, torsion, simple bending, and transverse shear; analysis of stress and strain; and deflections of beams.
- University of Colorado at Boulder**      **Teaching Assistant**  
CVEN 3227 – *Probability and Statistics, (3 credits, undergraduate Junior. Level)*      Spring 2016

- Introduces uncertainty-based analysis concepts and applications in the planning and design of civil engineering systems, emphasizing probability, statistics and design concepts and methods.

#### University of Colorado at Boulder

CVEN 3161 – *Mechanics of Materials 1 (3 credits, Undergraduate Jr. Level)*

- Addresses concepts of stress and strain; material properties, axial loading, torsion, simple bending, and transverse shear; analysis of stress and strain; and deflections of beams. Includes selected experimental and computational laboratories.

Teaching Assistant

Fall 2015

#### Polytechnic University of Catalonia

*Reinforced Concrete Design (5 credits, Undergraduate Sr. Level)*

- Applies basic principles of structural engineering and mechanics to the design of reinforced concrete structures, including design of beams, columns, slabs, and footings; continuous beams and frames; cast-in-place buildings.

Teaching Assistant

Fall 2013/Spring 2014

#### HERPA Academy

*Math, English, and Natural Sciences (Middle-School Level)*

- Created lesson plans, imparted lecture and practical classes, developed tests and homework, implemented grading, corrected coursework.

Instructor of Record

Jan 2011- June 2012

### PEER-REVIEWED JOURNAL PUBLICATIONS

- [1] **Techera, U.**, Hallowell, M., and Littlejohn, R. (2017). “Worker Fatigue in Electrical-Transmission and Distribution-Line Construction” *Journal of Construction Engineering and Management*, (accepted for publication: June 2018).
- [2] **Techera, U.**, Hallowell, M., and Littlejohn, R. (2018). “Measuring and Predicting Fatigue in Construction: An Empirical Field Study” *Journal of Construction Engineering and Management*, 144(8), 04018062
- [3] **Alruqi, W.**, Hallowell, M., and Techera, U. (2018) “Safety climate dimensions and their relationship to construction safety performance: a meta-analytic review” *Safety Science*, 109: 165-173.
- [4] **Techera, U.**, Hallowell, M., Stambaugh, N., and Littlejohn, R. (2016). “Causes and consequences of occupational fatigue: Meta-analysis and systems model.” *Journal of Occupational and Environmental Medicine*, 58(10), 961-973.

### PEER-REVIEWED CONFERENCE PROCEEDINGS

- [1] **Techera, U.**, and Bozic, C. (2017). “Differences in Learning Outcomes and Engagement Across Traditional, Blended, and Online Engineering Management Undergraduate Courses” Proceedings of the ASEE Annual Conference & Exposition. Columbus, Ohio, June 2017.
- [2] **Techera, U.**, Hallowell, M., and Littlejohn, R. (2017). “Objectively Assessing and Predicting Fatigue Levels Among Construction Workers” *6th CSCE/ASCE/CRC International Construction Specialty Conference*, Vancouver, British Columbia; Canada, May 31-June 3, 2017, (Accepted, February 2017).
- [3] **Techera, U.**, Hallowell, M., Marks, E., and Stambaugh, N. (2016). “Measuring occupational fatigue: A comprehensive review and comparison of subjective and objective methods” *Proceedings of the ASCE Construction Research Congress 2016: pp. 1546-1555*. San Juan, Puerto Rico, May 31-June 2, 2016. <http://ascelibrary.org/doi/abs/10.1061/9780784479827.289>

### WORKS IN PROGRESS

- [1] **Techera, U.**, Hallowell, M., and Littlejohn, R. (2017). “Correlation between Fatigue and Hazard Recognition Ability” *Safety Science*, (Planned Submission: April 2019).

### DOCTORAL DISSERTATION

- [1] **Techera, U.D.**, 2017. Measuring and Managing Construction Worker Fatigue (Doctoral dissertation, University of Colorado at Boulder)

### INVITED SCHOLARLY PRESENTATIONS

- [1] “Fatigue in Electrical Work” Quanta Services Inc. Annual Risk and Safety Conference, Houston, TX, September 28, 2017.
- [2] “Electrical Workers Fatigue.”(Presenter and committee member) EEI Mutual Assistance Conference (Edison Electric Institute), Seattle, WA, October 2-5, 2016.
- [3] “Electrical Workers Fatigue.”(Presenter) EEI fall occupational safety & health committee conference (Edison Electric Institute), Dayton, Ohio, September 26-29, 2016.
- [4] “Utility Workers Fatigue”. .”(Presenter and committee member) PSEG, The Human Factor in Performance, (PSEG), Newark, NJ, June 9-10, 2016
- [5] “Electrical Workers Fatigue.”. ELECTRI International council meeting (ELECTRI International), Naples, FL, January 20-22, 2016

### RESEARCH PROJECTS AND GRANTS

- [1] ELECTRI International. Managing Worker Fatigue on Transmissions and Distribution Line Work. October 2014.

### AWARDS AND HONORS

University of Colorado Doctoral Assistantship for Excellence Award ( <i>tuition, fees, and up to \$35,000/year</i> )	2014–2017
University of Colorado Dean’s Graduate Assistantship ( <i>\$5,000</i> )	2014–2017
Balsells Fellowship ( <i>\$3,000</i> )	2014–2016

### PROFESSIONAL MEMBERSHIPS AND SERVICE

American Society of Civil Engineers (ASCE)	2017–Present
Engineers Without Borders U.S.A	2017–Present
Design-Build Institute of America (DBIA)	2017–Present
International Journal of Construction Education and Research (Reviewer)	2017–Present

American Society of Engineering Education (ASEE)	2016–Present
ASCE, Construction Research Congress (Reviewer)	2016–Present
American Water Works Association (AWWA)	2015–Present

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### **PROFESSIONAL TRAINING**

Graduate Certificate in College Teaching (March, 2018)

- Sustained and systematic pedagogical training that promotes current and best practices in teaching and learning; appropriate use of instructional technology; and systematic assessment of student learning outcomes.
- 40 hours of coursework, reflective teaching experience, faculty and peer observation and evaluation.

Design-Build Certification Course by DBIA (June, 2017)

- Fundamentals of Project Delivery; Principles of Design-Build Project Delivery; Post-Award Design-Build

Construction and Architecture industry software packages:

- MATLAB: Modeling
  - AutoCAD: Design
  - Revit: Design
  - Micro-station: Design and Work Packaging
  - Autodesk 3D Max and Sketchup 3D: Modeling
  - MVP Stats: Statistical Software
  - SPSS: Statistical Software
  - @Risk: Risk Modeling
  - Primavera: Risk Modeling
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### **LANGUAGES**

- Spanish
  - English
  - Catalan
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