

Juan D. Nunez Morales

413 Stratford Building
202 N. Race Street
Urbana, IL 61801, USA

Phone: +1 (217) 305-5101
Email: jdnunez2@illinois.edu
Website: juandiegomn.github.io

EDUCATION

- **University of Illinois at Urbana-Champaign (UIUC)** *May 2021*
 - PhD. in Civil Engineering
- **University of Illinois at Urbana-Champaign (UIUC)** *May 2017*
 - Ms. in Construction Management (GPA: 3.89/4.00)
- **Instituto Tecnológico de Santo Domingo (INTEC)** *January 2014*
 - Bs. in Civil Engineering (GPA: 3.74/4.00)
 - Honors: Magna cum Laude

RESEARCH INTERESTS

Construction Labor Productivity, Time Series Analysis, Deep Learning, Building Information Modeling, Computer Vision

PROFESSIONAL EXPERIENCE

- **Reconstruct, Inc.** *Champaign, IL*
VDC Engineer *August 2019–Present*
 - Responsible for the project portfolio of customers in Australia, Mexico, and Latin America.
 - Coordinate and review BIM, reality model and analytics deliverables.
 - Create and manage 4D models.
 - Create progress reports across various customer projects.
- **Katerra Inc.** *Scottsdale, AZ*
Operations Engineer Intern *May 2019–August 2019*
 - Lead developer of the next generation of Katerra's platform for productivity data collection.
 - Supervised the design and prototyping construction of manufacturing assemblies for full sized bathrooms and kitchens, reducing 80% of the install time of such items on site.
 - Created construction acceptance specification documents for bathroom and kitchen manufacturing assemblies.
 - Planned time studies of exterior cladding of buildings using fiber cement board, for feasibility analysis of shifting towards a manufacturing environment.
- **Katerra Inc.** *Scottsdale, AZ*
Business Intelligence Intern *May 2018–December 2018*
 - Evaluated feasibility and develop tools for data management of construction projects, and corporate processes to maximize productivity and efficiency of decisions at the project and company level.
 - Created fully automated dashboards with predictive capabilities to assess into construction labor productivity of every single project being developed by the company.
 - Deployed in-house app for tracking and monitoring labor hours on construction projects based on identified needs and requirements from both the field and data perspective.
 - Created the corporate process map for the construction self-perform department to enhance the feasibility analysis of which trades should be self-performed by the company in each project.

- Liaison between Reconstruct Inc. and Katerra, responsible for the proper implementation of Reconstruct's platform for construction monitoring using Reality Capture through drone imagery and BIM models on a residential project being built in Las Vegas, Nevada.

- **K-Five Construction**

Lemont, IL

Project Manager Intern

May 2016–August 2016

- Cost Estimator of public and private projects.
- Assist Project Management Team on design and administration decisions for the proposal for the Indiana I-65 Reconstruction, and the Illinois I-55 Reconstruction.
- Review contracts clauses and contract managing during bidding phase of projects.
- Submit bids, as well as attend bid openings of projects not submitted by the company to review the competition's current status.
- Managed customers for project initiation, by determining project requirements, and scope.

TEACHING EXPERIENCE

- **University of Illinois at Urbana-Champaign.**

Champaign, IL

Graduate Teaching Assistant

January 2019–Present

- Teaching Assistant of Professor Golparvar-Fard, Ph.D., for the course CEE598–Building Information Modeling.
- Help students develop an understanding of BIM implementations at the project and corporate level, as well as creating BIM Execution Plans, 4D, 5D, and 6D Simulations, Clash Detection, and monitoring construction progress through Reality Capture and model comparison.
- Help prepare all course material, from assignments, readings, to final projects on entrepreneurial cases.

- **University of Illinois at Urbana-Champaign.**

Champaign, IL

Teaching Assistant

August 2017–May 2018

- Teaching Assistant of Professor Golparvar-Fard, Ph.D., for the course CEE320–Construction Engineering and Management.
- Help students develop an understanding of the construction “Project Lifecycle” process from the initial conception phase of a project through the completion of construction, placing emphasis on the construction and management aspects of the lifecycle.
- Help prepare all course material, from assignments, readings, quizzes, and exams, to final projects on entrepreneurial cases.

RESEARCH EXPERIENCE

- **University of Illinois at Urbana-Champaign**

Champaign, IL

Graduate Student

August 2017–January 2018

- Title of Research: “Construction Productivity Time Series Prediction using Probabilistic Models”
- Responsibilities: Data gathering, testing, validation, research and writing on a paper that explains how can productivity be predicted through a certain probabilistic model with data gathered from the construction site, in a non-retroactively way, meaning that it would obtain feedback before an event occurs.

- **University of Illinois at Urbana-Champaign**

Champaign, IL

Research Assistant

January 2017–August 2017

- Work as a Research Assistant at the Real-Time and Automated Monitoring and Control Laboratory, led by Professor Golparvar-Fard, Ph.D., on addressing fundamental problems in visual data analytics for construction management.
- Explore different existing and in-development technologies aimed to solve the collaboration and information sharing issue in construction. Software explored include Revit for creating automatically broken down models according to a schedule, Assemble Systems and Reconstruct Inc. for online model collaboration, and constant handling and creation of 4D models in Navisworks. Other software for exploring the breaking down of elements

are Autodesk Forge, as well as tools capable of handling point clouds created from images obtained from drones to create As-Built 3D models of projects.

- Work on construction productivity data analytics, with the intent of creating robust and accurate models, capable of predicting a week-ahead worth of productivity data for each construction activity, focusing on ARIMA models of Time-Series of productivity data, and Machine Learning approaches.

• **University of Illinois at Urbana-Champaign**

Champaign, IL

Graduate Student

August 2015–December 2015

- Title of Research: “Model-Based Production Control in Construction”

- Responsibilities: Explored how the lack of details in 3D and schedule representation could be minimized. Studied in detail planning methodologies such as Last Planner System and BIM-based software for scheduling such as KanBIM. Set relationships between inputs of materials/man-hours vs outputs in construction.

• **Instituto Tecnológico de Santo Domingo (INTEC)**

Santo Domingo, Dominican Republic

Graduate Student

August 2013–January 2014

- Title of Research: “The Application of Last Planner System and Fundamental Principles of Material Management during the Construction of a Real-Estate Project in Santo Domingo City”

- Responsibilities: Obtained, calculated and analyzed statistical information of the development of the project, and investigated about previous related works in Santo Domingo.

WORKING PAPERS

1. Forecasting Short-Term, Project-Level Construction Labor Productivity via ARRC-Net (Auto-Regression Resource-Constrained Network)

Journal Paper

Joint with Mani Golparvar-Fard

2. Forecasting Project-Specific Short-Term Construction Labor Productivity Trends Using Deep Learning: A Case Study

Conference Paper

Joint with Mani Golparvar-Fard

HONORS AND AWARDS

- **Teaching Assistant Ranked as Excellent by Students, CEE598-BIM**

May 16, 2020

- **Fulbright Program Grantee, LASPAU Administered Scholarship**

August 01, 2015

SKILLS

Languages:

- Spanish: Native
- English: Fluent

Software

- Microsoft Software: Microsoft Excel, Microsoft Word, Microsoft PowerPoint
- Design Software: CypeCAD Water, ETABS, Autodesk Revit, Sketchup, Autodesk Civil 3D, AutoCAD
- Drawing and Modeling Software: Autodesk Navisworks, Pix4D, CloudCompare, Vico, Synchro
- Cost Estimating and Scheduling: Primavera, Microsoft Project, B2W, BlueBeam ReVu
- Data Analytics: Tableau, PowerBI

Programming

- MATLAB: Intermediate
- Python: Intermediate
- R: Intermediate
- L^AT_EX: Intermediate
- HTML: Basic

CERTIFICATIONS

U.S. Green Building Council (USGBC), LEED Green Associate

June 2016

- Score: 185/200

- Chicago, IL

Acoproví, Real-Estate Law Certified

September 2014

- Santo Domingo, Dominican Republic

1st International Structural Engineering Congress CSI Caribbean

October 2013

- Instituto Tecnológico de Santo Domingo (INTEC), Santo Domingo, Dominican Republic,

REFERENCES

Prof. Mani Golparvar-Fard
Department of Civil and Environmental Engineering
University of Illinois at Urbana-Champaign
☎ +1 (217) 300-4511
✉ eunyi@illinois.edu

Nicolas Arnold
Senior Director and Head of Product
Reconstruct Inc.
☎ +1 (650) 722-8038
✉ nicolas@reconstructinc.com

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