

# ANIBAL TAFUR

## PhD Student in Civil Engineering at Rice University

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### PROFILE

I am a Peruvian graduate student in Civil Engineering currently pursuing a PhD degree at Rice University under the supervision of Prof. Jamie Padgett, with expected graduation date at the end of August 2024. My main research focus is on resilience modeling of transportation infrastructure subjected to coastal hazards. I obtained a BSc in Civil Engineering from the Pontifical Catholic University of Peru (PUCP) in 2006, and an MSc in Structural Engineering from the University of Manchester (UK) in 2016, graduating with honors. For this MSc studies, I was sponsored by the "President of the Nation" Scholarship, granted by the Peruvian Ministry of Education. I have 3 years of teaching experience at the undergraduate level, and 5 years of industry experience in the development of structural projects (designing reinforced concrete and steel structures, evaluating, and retrofitting existing structures). I am currently seeking postdoctoral positions in the areas of disaster risk and resilience modeling of infrastructure subjected to extreme natural hazards.

### MAIN SKILLS

- Modeling physical response of networked infrastructure systems subjected to extreme events
- Uncertainty quantification and propagation in disaster risk modeling
- Risk assessment in terms of direct and indirect losses
- Modeling recovery trajectories in complex infrastructure systems
- Proficiency in Python, Jupyter Notebooks, and IN-CORE environment
- Geodata processing skills in ArcGIS and QGIS

### EDUCATION

<b>2019 – 2024 (expected)</b>	<b>RICE UNIVERSITY</b> PhD in Civil Engineering	<b>Houston – USA</b>
<b>2015 – 2016</b>	<b>THE UNIVERSITY OF MANCHESTER</b> MSc in Structural Engineering	<b>Manchester – UK</b>
<b>2006 –2011</b>	<b>PONTIFICAL CATHOLIC UNIVERSITY OF PERU (PUCP)</b> BSc in Civil Engineering	<b>Lima – Peru</b>

### DISTINCTIONS AND AWARDS

- Appointment as Honorary Lecturer by the National University of Amazonas (UNTRM), (February 2017) [\[LINK\]](#)
- Nomination for the 'Faculty's Distinguished Achievement Award – PGT Student of the Year 2016'. Faculty of Science and Engineering. The University of Manchester, UK (December, 2016) [\[LINK\]](#)
- Best Overall Average of the MSc Structural Engineering Program, Class of 2016. School of Mechanical, Aerospace and Civil Engineering. The University of Manchester, UK (December, 2016) [\[LINK\]](#)
- 'President of the Nation' Postgraduate Scholarship – Peruvian Ministry of Education (May 2015)

### WORK EXPERIENCE IN ACADEMIC POSITIONS

<b>08/2023 – 12/2023</b>	<b>RICE UNIVERSITY</b> Teaching Assistant to Prof. Padgett in the CEVE Department Subject: Bridge Engineering and Extreme Events	<b>Houston – USA</b>
<b>07/2017 – 06/2019</b>	<b>PONTIFICAL CATHOLIC UNIVERSITY OF PERU (PUCP)</b> Researcher and Lecturer at the Faculty of Science and Engineering Subjects: Mechanics of Materials, Statics, and others.	<b>Lima – Peru</b>
<b>02/2017 – 12/2017</b>	<b>NATIONAL UNIVERSITY OF AMAZONAS (UNTRM)</b> Lecturer at the Graduate School, MSc Structural Engineering Program	<b>Chachapoyas – Peru</b>
<b>03/2017 – 07/2017</b>	<b>PERUVIAN UNIVERSITY OF APPLIED SCIENCES (UPC)</b> Lecturer at the Faculty of Science and Engineering Subjects: Earthquake Engineering, Structural Analysis, and others.	<b>Lima – Peru</b>

## ACADEMIC PUBLICATIONS

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- Type: Journal Paper  
Title: 'Climate Change Challenges the Resilience of Railway Systems'  
Authors: Anibal Tafur, Sotirios Argyroudis, Stergios Mitoulis and Jamie E. Padgett  
Publication: Nature Communications Engineering  
Date: 2024 (in preparation)
- Type: Journal Paper  
Title: 'A flow-based commodity-independent port capacity model for resilience assessment of intermodal freight networks subjected to coastal hazards' (**Attached as sample publication**)  
Authors: Anibal Tafur and Jamie E. Padgett  
Publication: Reliability Engineering and System Safety  
Date: 2024 (in review)
- Type: Journal Paper  
Title: 'Case studies of multihazard damage: Investigation of the interaction of Hurricane Maria and the January 2020 earthquake sequence in Puerto Rico'  
Authors: Alexandra Hain, Arash E. Zaghi, Jamie E. Padgett and Anibal Tafur  
Publication: Frontiers in Built Environment  
Date: February 2023  
URL: <https://doi.org/10.3389/fbuil.2023.1128573>
- Type: Conference Paper  
Title: 'Seismic Resilience of Intermodal Freight Transportation Networks with Ties to Economic Impact Modeling' (**Attached as sample publication**)  
Conference: Lifelines Conference, Los Angeles – USA  
Authors: Anibal Tafur, Jamie E. Padgett and Andres Gonzalez  
Date: November 2022  
Link: <https://doi.org/10.1061/9780784484449.033>
- Type: Conference Paper  
Title: 'Effectiveness of Rubber Isolators for the Seismic Retrofitting of a Peruvian Highway Concrete Bridge'  
Authors: Anibal Tafur and Thomas Swailes  
Conference: Structural Engineers World Congress (SEWC 2017), Cancun – Mexico  
Date: November 2017  
Link: <https://doi.org/10.13140/RG.2.2.21397.42729>
- Type: Masters Dissertation  
Title: 'Effectiveness of Rubber Isolators for the Seismic Retrofitting of a Peruvian Multi-Span Concrete Highway Bridge'  
Date: December 2016 – The University of Manchester, UK  
Supervisor: Thomas Swailes  
Link: [https://anibaltafur.github.io/files/MSc\\_Dissertation\\_Anibal\\_Tafur.pdf](https://anibaltafur.github.io/files/MSc_Dissertation_Anibal_Tafur.pdf)
- Type: Undergraduate Dissertation  
Title: 'Structural Design of a Housing Building, with a Basement and Six Stories, Located in the Magdalena District'  
Original Title: "DISEÑO ESTRUCTURAL DE UN EDIFICIO DE VIVIENDA, CON UN SÓTANO Y SEIS PISOS, UBICADO EN MAGDALENA"  
Date: December 2012 – Pontifical Catholic University of Peru (PUCP)  
Supervisor: Antonio Blanco  
Link: <https://tesis.pucp.edu.pe/repositorio/handle/123456789/1688>

## SPEAKER IN CONFERENCES

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Participation as speaker in the following conferences and/or congresses:

- ASCE INSPIRE Conference (Virginia – USA, November 2023)
- 37th International Conference on Coastal Engineering (Sydney – Australia, December 2022)
- INFORMS Annual Meeting 2022 (Indianapolis – USA, October 2022)
- ASCE Lifelines Conference, Understanding, Improving and Operationalizing Hazard Resilience for Lifelines (Los Angeles – USA, January 2022).
- 12<sup>th</sup> International Symposium on Disaster Risk Management (Lima – Peru, September 2018)

- 5<sup>th</sup> Civil Engineering National Students Congress 'Seismic and Geotechnical Engineering in Peruvian Buildings' organized by Cesar Vallejo University (Chimbote – Peru, June 2018)
- 6<sup>th</sup> Regional Symposium 'Structural Design and Disaster Mitigation' organized by the Peruvian Engineers Association (CIP) (Chimbote – Peru, May 2018).
- 20<sup>th</sup> Civil Engineering National Congress organized by the Peruvian Engineers Association (CIP) (Lima – Peru, April 2018).
- 6<sup>th</sup> Structural Engineers World Congress (SEWC 2017) (Cancun – Mexico, November 2017).
- Seismic Risk Conference organized by UPC (Peruvian University of Applied Sciences), (Lima – Peru, June 2017).
- 5<sup>th</sup> Annual Conference of the INNS (International Network for Social Sustainability) (North Carolina –USA, June 2017).

## WORK EXPERIENCE IN INDUSTRY POSITIONS

<b>03/2015 – 07/2015</b>	<b>BUENAVENTURA INGENIEROS S.A. (BISA)</b> Position: Consultant in Structural Engineering This firm provides consulting services for the mining industry. I worked as a consultant in the design of mining plants structures.	<b>Lima – Peru</b>
<b>11/2014 – 03/2015</b>	<b>TUESTA CONSULTORES Y EJECUTORES E.I.R.L.</b> Position: Consultant in Structural Engineering I served as a consultant, overseeing the review and revision of structural plans and specifications to ensure their precise implementation in the field.	<b>Chachapoyas – Peru</b>
<b>09/2012 – 09/2014</b>	<b>HIGASHI INGENIEROS S.A.C.</b> Position: Project Engineer I primarily focused on the analysis and design of structures, contributing to various projects ranging from residential buildings to hospitals and schools.	<b>Lima – Peru</b>
<b>01/2010 – 04/2010</b>	<b>FERROCARRIL CENTRAL ANDINO S.A. (FCCA)</b> Position: Engineering Trainee I served as a trainee in the engineering division of this firm, contributing to the development of projects for the railway industry.	<b>Lima – Peru</b>

## LANGUAGES

**SPANISH:** Native language      **ENGLISH:** Advanced Level – TOEFL iBT Exam Score: 107 / 120 (September 2018)

## VOLUNTEER WORK

- During the 2017 flood crisis in Peru, I actively volunteered my services with the Peruvian Engineers Association (CIP). In this capacity, I contributed to the creation of technical reports focused on damage assessment and proposed mitigation strategies.
- In November 2016, I volunteered as an English teacher at Slukat School in Bali, Indonesia. This non-profit organization offers free complementary education to low-income children from Gianyar town, including language courses, handcrafting, dance, and music.

## REFERENCES

- Dr. Jamie Padgett  
Chair of Civil and Environmental Engineering and Academic Advisor  
Rice University  
[jamie.padgett@rice.edu](mailto:jamie.padgett@rice.edu)
- Dr. Leonardo Duenas-Osorio  
Professor of Civil and Environmental Engineering  
Rice University  
[leonardo.duenas-osorio@rice.edu](mailto:leonardo.duenas-osorio@rice.edu)