

# Luis Guillermo Natera Orozco

## Data Analyst

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Motivated, interdisciplinarity team-work oriented, and responsible Data Analyst with significant experience working in urban mobility and data analysis. Highly educated, finishing a Ph.D. in Network Science from the Central European University, where I developed new data analysis methods for the analysis of large-scale urban mobility network data, along with the designing of new algorithms for the quantification of urban liveability and connectivity improvement for bicycle infrastructure networks.

## WORK EXPERIENCE

### Central European University

Ph.D. Researcher

01/08/2018 - Present

#### Multimodal Fingerprint of Urban Transportation Networks

skills

## EDUCATION

- Ph.D. Network Science, Central European University, Budapest, Hungary. 2021 (expected)  
Dissertation: *Multilayer network analysis of sustainable, multimodal urban transport networks*  
Advisor: Federico Battiston  
Co-Advisor: Michael Szell (ITU Copenhagen)
- M.A. Communication of Science and Culture, ITESO, Tlaquepaque, Mexico. 2015  
Dissertation: *La construcción de comunidades en red sobre conocimiento urbano en el marco del crecimiento urbano: Los blogs de espacio público*  
Advisor: Eduardo Quijano  
Committee: Rossana Reguillo, Francisco Morfín
- B.Arch. Architecture, ITESO, Tlaquepaque, Mexico. 2010

## ACADEMIC AFFILIATIONS

- 2021 – Research fellow, Agglomeration and Social Networks Research Lab, ELKH Centre for Economic and Regional Studies, Budapest, Hungarian.
- 2020 – Research affiliate, Observatorio de Ciudades, ITESM, Zapopan, Mexico.

- 2017 – Ph.D. Candidate, Department of Network and Data Science, Central European University, Budapest, Hungary.
- 2016–17 Executive Coordinator Signa\_Lab, Department of Sociocultural Studies, ITESO, Tlaquepaque. Mexico
- 2015 Visiting Student, Center for Civic Media, Media Lab, Massachusetts Institute of Technology, Cambridge, MA. USA
- 2008 Visiting Student, Universidad de Valparaíso, Valparaíso, Chile

## RESEARCH AND TEACHING INTERESTS

Network science

Urban planning and mobility

Big data for social good

Data science and data visualization

## PUBLICATIONS

### Peer-Reviewed Journal Articles

- 2020 Natera Orozco, L. G., Battiston, F., Iñiguez, G., Szell, M. “Data-driven strategies for optimal bicycle network growth” *Royal Society Open Science*, 2020. 7: 201130.  
<https://doi.org/10.1098/rsos.201130>
- 2020 Natera Orozco, L.G., Battiston, F., Iñiguez, G., Szell, M. “Extracting the multimodal fingerprint of urban transportation networks” *Transport Findings*, 2020.  
<https://doi.org/10.32866/001c.13171>

### Journal Article Manuscripts under Peer Review

- 2021 Natera Orozco, L. G., Alessandretti, L., Szell, M., Battiston, F. “Multimodal transportation and mobility in urban networks” Under review at *Transportation*

### Peer-Reviewed Conference Proceedings

- 2019 Natera Orozco, L. G., Deritei, D., Vancso, A., Vasarhelyi, O. “Quantifying life quality as walkability on urban networks” In: Cherifi H., Gaito S., Mendes J., Moro E., Rocha L. (eds) *Complex Networks and Their Applications VIII. COMPLEX NETWORKS 2019. Studies in Computational Intelligence*, 2019, pp. 905–918.
- 2014 Natera Orozco, L. G. “Comunicación, ciudad e internet: flujos de información urbana en entornos digitales” VI Seminario Internacional de Investigación en Urbanismo. Bogota, Colombia.

## Peer-Reviewed Book Chapters

- 2019 Natera Orozco, L. G. “Un cambio de la comunicación gubernamental y política. De los medios de comunicación a las redes sociales.” *Informe Anual Q Medios 2018*, edited by Bernal, G. Jalisco, Mexico: ITESO.
- 2018 Natera Orozco, L. G., Reguillo, R. “Comunicación y cambio social: participación política e internet en Jalisco” *Enciclopedia Jaliscience de la Comunicación.*, edited by Orozco, G., Reguillo, R. Jalisco, Mexico: Universidad de Guadalajara.

## Reviews and Other Articles

- 2016 Natera Orozco, L. G., (as Signa\_Lab) “Battle of the hashtags: Mapping the online conversation surrounding Mexico’s gas price” *Global Voices*.

## Manuscripts in Preparation and Development

- 2021 Tupikina, L., Natera Orozco, L. G., Battiston, F. “A comparative analysis of station and dockless bike share systems.”

## INVITED TALKS

- 2021 Bauhaus-Universität Weimar, Germany.
- 2021 URBANUM. Budapest, Hungary.
- 2021 Graph data science. Manning Publications. Online.
- 2020 Science, Technology and Innovation Council. Hidalgo, Mexico.
- 2020 Neo Urban Networks Workshop. Paris, France.
- 2020 PIP Ciudad Futuro. Guadalajara, Mexico.
- 2019 Data Science MeetUp. Timisoara, Romania.
- 2019 FabLab, West University of Timisoara. Timisoara, Romania.
- 2019 4D Cities, Multi-Actor Systems Department, TU Delft. Delft, Netherlands.
- 2019 Mobile and Social Computing Lab, Fondazione Bruno Kessler. Trento, Italy.
- 2019 ANET-Talks, ANET Lab, Hungarian Academy of Science. Budapest, Hungary.
- 2018 Signa\_Lab, ITESO. Tlaquepaque, Mexico.
- 2015 Encuentro de Urbanismo Alternativo, Centro Cultural de España en México. Mexico City, Mexico.
- 2015 II Simposio de ciudades y territorios incluyentes “Derecho a la Ciudad”, Universidad Autónoma de Yucatán. Merida, Mexico.

## CONFERENCE ACTIVITY

### Conference Presentations

Presenting author *italicized*, if other.

- 2019 Natera Orozco, L. G., Deritei, D., Vancso, A., Vasarhelyi, O. "Quantifying life quality as walkability on urban networks" VIII Conference in Complex Networks and their Applications. Lisbon, Portugal. December 12-14.
- 2019 Natera Orozco, L. G., Battiston, F., Iñiguez González, G., and Szell, M. "Multiplex urban fingerprints for bicycle infrastructure planning" Cycling Research Board Meeting. Delft, Netherlands. October 31-1 November.
- 2019 Natera Orozco, L. G., Battiston, F., Iñiguez González, G., and Szell, M. "Multiplex urban fingerprints for bicycle infrastructure planning" 2019 NetSci. Burlington, Vermont. May 27-31.
- 2018 Natera Orozco, L. G., Battiston, F., Szell, M. "Characterizing cities from their multiplex infrastructure patterns" SICC Workshop ComplexCity@PoliTo. Turin, Italy.
- 2013 Natera Orozco, L. G. "Quiosco Libre, reading network in the public space" Future of Places. Stockholm, Sweden.

## **Posters**

- 2018 Natera, L. "Budapest. Multilayer urban network" State of the Map. Milan, Italy.
- 2017 Natera, L., Ábrego, V. "The evolution of twitter during the US elections" Data Stories. Budapest, Hungary.

## **GRANTS, AND AWARDS**

### **Awards**

- 2020 Award for Advanced Doctoral Students. Central European University
- 2019 Best lighting talk award. International Conference in Complex Networks and their Applications.

### **Grants and Fellowships**

- 2020, 21 Write-up grant. Central European University
- 2019 Registration grant. International Conference in Complex Networks and their Applications
- 2019 Ph.D. conference travel grant. CEU Budapest Foundation
- 2019 Registration grant. NetSci
- 2018, 19 Travel grant. Department of Network and Data Science, Central European University
- 2017–20 Doctoral grant. Central European University.
- 2015 Academic Stay at MIT. Mexican National Council of Science and Technology
- 2013 Master Studies Grant. Mexican National Council of Science and Technology

## **TEACHING EXPERIENCE**

### **European Consortium for Political Research**

- 2021 Teaching Assistant, Python Programming for Social Scientists. Summer Virtual Methods School 2021
- 2021 Teaching Assistant, Python Programming for Social Scientists. Winter Virtual Methods School 2021
- 2020 Teaching Assistant, Python Programming for Social Scientists. Summer Virtual Methods School 2020

### **Central European University**

- 2020 Teaching Assistant, Scientific Python
- 2019 Teaching Assistant, Statistical Methods in Network Science

### **ITESO**

- 2019 Network Science (Summer 2019) Invited lecturer, co-taught with Diego Arredondo (ITESO)
- 2017 Network Science (Summer 2017) Co-taught with Emma Towlson (Northeastern University), Sean P. Cornelius (Northeastern University), and Ricardo Zavala (ITESO)
- 2015–17 Communication, Culture and Society (Spring 2016, 2017)
- 2015–16 Social Systems Theory (Fall 2015, 2016)

## **RESEARCH EXPERIENCE**

- 2015–17 Researcher, Anillo Primavera.  
Principal Investigator: Sandra Valdes.
- 2016 Researcher, Online harassment of journalists and activists in Mexico, Jigsaw (formerly Google Ideas) and Global Voices.  
Principal Investigator: Ellery Biddle.
- 2012 Researcher, Public Transportation in Guadalajara.  
Principal Investigator: Mario Silva.

## **ACADEMIC VISITS**

- 2015 Center for Civic Media, MIT Media Lab, Boston, USA, Jan - Jun
- 2012 Universidad de Valparaíso, Valparaíso, Chile.

## **SERVICE**

### **Journal Peer Review**

Scientific Data

## **Service to Department**

Ph.D. program representative, Central European University, DNDS, 2019-20

Co-organizer Data Stories visualization exhibition, Central European University, DNDS, 2018-19

## **PROFESSIONAL AFFILIATIONS**

Network Science Society

Python Software Foundation

SICC Italian Society for Chaos and Complexity

## **PROFESSIONAL EXPERIENCE**

2020– Latin American Capital, Chief Data Scientist. Guadalajara, Mexico

2020–21 PIP Ciudad Futuro (collaboration with Google.org), Data Scientist Consultant. Guadalajara, Mexico.

2019–20 Latin American Capital, Senior Data Scientist Consultant. Guadalajara, Mexico

2019 Maven7US, Urban Data Scientist. Budapest, Hungary

2015–17 Mesura, Networks and Data Specialist. Guadalajara, Mexico

2014 Socialinks, Networks Consultant. Guadalajara, Mexico

2014 Institute for Mobility and Transportation of the State of Jalisco, Mobility Analyst. Zapopan, Mexico

2010–14 Colectivo Triciclo, Co-Founder / CEO. Guadalajara, Mexico

## **SKILLS AND METHODS**

### **Statistical and Computational Methods**

Network science methods

Programming, data wrangling and visualization: Python

Web: Django, HTML/Javascript, Wordpress, Jekyll

Network visualization: Gephi, Cytoscape, Matplotlib + NetworkX

Version control: Git + {GitHub, GitLab, BitBucket}

Other:  $\text{\LaTeX}$ , Adobe CS, CAD, QGIS, Blender

### **Languages**

Spanish Native

English Professional proficiency

Updated August 2021