

# Leilei Duan

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## CURRENT APPOINTMENT

Lecturer (2019 - present)    Spatial Sciences Institute, University of Southern California, CA

## EDUCATION

Ph.D.                                Design, Construction and Planning, University of Florida, 2018  
M.S.                                Interdisciplinary Ecology, University of Florida, 2018  
M.S.                                Urban and Regional Planning, University of Florida, 2014  
B.S.                                Urban Management, East China University of Science and Technology, 2011  
B.S. (minor)                      Finance, East China University of Science and Technology, 2011

## PROFESSIONAL EXPERIENCE

2017 – present    Co-founder and administrator for Geodesign Wiki website: <http://geodesignwiki.com>  
2018 - 2019        Spatial Sciences Institute, University of Southern California, Los Angeles, California  
Post-doctoral Teaching Fellow  
2014 – 2018        Research assistant at College of Design, Construction and Planning  
Supervisor: Dr. Paul Zwick, Dr. Ilir Bejleri  
Explored the Geodesign workflow in population and employment allocation process  
Analyzed statewide traffic safety data; explored the impact of land use patterns  
changes on traffic crashes.  
2016                RS&H, Tampa, Florida (Summer 2016)  
Visualization Intern  

- Created 3D models of the City of Tampa using CityEngine to support the Tampa Bay Expressway (TBX) project, and provided GIS demographic data and built environment data analysis support.

  
2015                RS&H, Jacksonville, Florida (Summer 2015)  
Transportation Planning Intern  

- Provided GIS analysis support for multiple projects, developed part of the GIS Technician Guide for RS&H, and hosted two Lunch and Learn events presenting new GIS techniques that can be applied to the current workflow.

  
2010                Kunming Urban Planning and Design Institute, Kunming, China (Summer 2010)  
Transportation Planning Intern  

- Involved in urban district reformation, and conducted relevant environment evaluations.

- 2010 Kunming City Planning Bureau, Kunming, China (Summer 2010)  
 Transportation and Environmental Planning Intern
- Participated in green field planning of Panlong District

## HONORS AND AWARDS

*University of Florida, Gainesville*

- 2014 – 2018 Graduate School Fellowship  
 2017 Outstanding International Student Award

## PUBLICATIONS

### Refereed Journal Articles

- 2019 Murtha, T., Wang, L. & **Duan, L.** (2019). Historical Analysis of Land Use Change and Geodesign of Rapid Urbanization: Orlando, Florida, USA. *Journal of Digital Landscape Architecture*, 4-2019, 205 – 212.

### Manuscripts in Preparation

- Duan, L., Wilson, J. P. “The Geospatial Community.” *The Geographic Information Science & Technology Body of Knowledge*. (in preparation)
- Duan, L., Zwick, P. & Mao, L. “Using Quality of Life Analysis in Conjunction of Land Use Suitability Analysis to Inform Urban Allocations.” *Urban Studies*. (in preparation)
- Duan, L., Zwick, P. & Bejleri, I. “Exploring the Use of Procedural Three-dimensional Modeling Techniques to Visualize Urban Form Changes.” *Journal of Urban Design*. (in preparation)

## PRESENTATIONS

### Conference Presentations

- 2020 “Procedural Modeling in Active Transportation (Bus, Bike, Walk) for City Sustainable Development.” Geodesign Summit. Redlands, California. February 24-27.
- 2019 “How Learning Happens in Geodesign” Education, Design and Practice – Understanding skills in a Complex World. Stevens Institute of Technology. Hoboken, New Jersey. June 17-19
- 2019 “Exploring Geodesign: Using Three-dimensional Parametric Modeling Techniques in Conjunction with Two-dimensional Land Use Models to Better Visualize Future Growth” American Association of Geographers. Washington DC. April 3-7
- 2019 “Generalized Procedural Rules for TOD & Urban Allocations” Geodesign Summit. Redlands, California. Feb 25-28  
 Presentation video recording: <https://bit.ly/2Vwd54X>
- 2018 “Exploring Geodesign: Using Three-dimensional Parametric Modeling Techniques in Conjunction with Two-dimensional Land Use Models to Better Visualize Future

- Growth” American Collegiate Schools of Planning Annual Conference. Buffalo, New York. Oct 25-28.
- 2017 “Detecting Development Opportunities Using Quality of Life Research and Land Use Suitability Modeling: A Case Study of the City of Tampa” American Collegiate Schools of Planning Annual Conference. Denver, Colorado. Oct 12-15.
- 2017 “Using 3D-GIS Based Parametric Modeling to Understand the Future Growth of Cities” Urban and Regional Information Systems Association Annual Conference. Jacksonville, Florida. Oct 23-26.
- 2017 “Using 3D parametric modeling to understand the future growth of cities: Simulating 3D infill allocation in the City of Tampa” 8th International Visualization in Transportation Symposium: Visualization in Action. Washington, DC. July 27-28.  
Presentation video recording: <https://bit.ly/2Hp4qNI>
- 2016 “Exploring Volumetric Population Allocation Based on a Trend Growth Model: A Case Study of Infill Allocation in the City of Tampa” American Collegiate Schools of Planning Annual Conference. Portland, Oregon. Nov 3-6.
- 2015 “Exploring the Use of Three-Dimensional Urban Simulation to Model Development Opportunities Based on Suitability Modeling and FBC Regulations” American Collegiate Schools of Planning Annual Conference. Houston, Texas. Oct 21-25.
- 2014 “Three-Dimensional Urban Simulation for Form-Based Codes” Florida American Planning Association Conference. Jacksonville, Florida.

### **Conference Panels Organized**

- 2019 “Geodesign – Current research and practice” American Association of Geographers. Washington DC. April 3-7.
- 2017 “Pedagogy in Geodesign Education” American Collegiate Schools of Planning Annual Conference. Denver, Colorado. Oct 12-15.

### **Webinars and Videos**

- 2021 “Virtual Information Session GIS in Sustainable Cities and Urban Planning” GIST Recruitment Webinar. Online. March 11 (co-presentation with R. Vos).
- 2021 “Using the Spatial Sciences to Reimagine the Future: Creating a Healthier, Livable, and Sustainable World” International Academy Webinar. Online. January 26 (co-presentation with J. P. Wilson).

### **Invited Talks**

- 2021 “Tech in Planning” American Planning Association Central Coast Planning Academy. Online. April 7 (upcoming).
- 2020 “Discussion about Urban Streets Functionalities”. USC Prison Education Project Faculty Forum. Online. October 16.
- 2019 “Discussion about Urban Streets Functionalities”. USC Prison Education Project Faculty Forum. California Institution for Men in Chino. November 16.
- 2019 “Generalizable Procedural Rules for TOD & Urban Allocations” (so-presentation with D. Wasserman). Brown Bag Talk at Spatial Sciences Institute. February 19.

## Interviews

Duan, Leilei. Interviewed by Zbrog, Matt. (2020) How GIS Analysis are Using Maps to Help Cities During COVID-19 and Beyond. Online Engineering Programs

Article link: <https://www.onlineengineeringprograms.com/features/urban-gis-analysts>

## TEACHING EXPERIENCE

### Current Courses Taught

*University of Southern California, Los Angeles*

SSCI 135g Maps in Digital World	Spring 2021
SSCI 201 Principles of Geodesign	Spring 2021

### Past Courses Taught

*University of Southern California, Los Angeles*

SSCI 201 Principles of Geodesign	Fall 2020, Spring 2020, Fall 2019
SSCI 313 Global Geodesign and Stakeholder Engagement	Fall 2020
SSCI 402 Geospatial Technology Management for Sustainability Science	Fall 2020
SSCI 572 GIS and Landscape Architecture	Fall 2020
SSCI 581 Concepts for Spatial Thinking (residential and online session)	Spring 2020

*University of Florida, Gainesville*

URP 4230 3D Modeling, Visualization and Simulation	Fall 2017
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### Labs and Discussion Instructor

*University of Southern California, Los Angeles*

SSCI 265 Water Planet	Fall 2019, Spring 2019
SSCI 301 Maps and Spatial Reasoning	Fall 2019, Fall 2018
SSCI 401 Geospatial Intelligence	Fall 2019, Fall 2018
SSCI 382L Principles of Geographic Information Science	Spring 2019
SSCI 383L Geospatial Modeling and Customization	Spring 2019
SSCI 214g Human Populations and Natural Hazards	Fall 2018

### Teaching Assistant

*University of Florida, Gainesville*

LAA 6656/ URP 6341 Environmental Design and Planning Practicum (Geodesign)	Spring 2018
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URP 6272 Spatial Analysis	Spring 2018, Spring 2017, Spring 2016
URP 6905 Urban Coastal Analysis	Fall 2017
URP 6872 Planning & Design II	Spring 2017
URP 6905 Geodesign Studio	Fall 2016
URP 6905 3D Geospatial Urban Modeling & Visualization	Fall 2016
URP 6871 Planning & Design I	Fall 2015, Fall 2016
URP 6374 Geodesign Studio	Fall 2013

### **Dissertations and Thesis Committee Served**

#### *University of Southern California, Los Angeles*

2021	Andre McClure. Suitable California Opportunity Zone (COZ) Locations for Affordable Housing Development in the Cities of Bakersfield, Los Angeles, and Palmdale.
2020	Emily Bartee. Roadway Hazard Analysis: A Safe Ride for Motorcycles
2020	Amanda Cuesta. Filling in the Gaps: 3D Mapping Arizona's Basin and Range Aquifer in the Prescott Active Management.
2020	Alexander Toy. Angeles Hike Finder: Creating a Spatial Database and Web Application to Discover Hikes Based on Attributes and Difficulty.
2020	Rebecca Wilson. Alaska Hike Search: Designing a mapping application for Alaskan trails and user contributed hazards.

### **PROFESSIONAL SERVICE**

#### *University of Southern California, Los Angeles*

2021 - present	Vice President of the Nu Theta Chapter of Gamma Theta Upsilon
2021	USC Geodesign Fellow – Fellow Selection Committee
2021	USC Esri EDC Student of The Year Award Committee
2020	Spatial Sciences Institute Merit Review Committee
2020	USC Geodesign Fellow – Fellow Selection Committee
2020	USC Esri EDC Student of The Year Award Committee
2020	SSI M.S. GIST Thesis Awards Committee
2019	USC Geodesign Fellow – Fellow Selection Committee
2019	USC Gateway Internship Program – mentor for Julie Ho

#### *University of Florida, Gainesville*

2016 – 2017	Esri Campus Ambassador
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## **ACADEMIC REVIEWS**

Transactions in GIS

European Journal of Educational Research

Oxford Research Encyclopedia of Global Public Health

## **PROFESSIONAL SOCIETY MEMBERSHIPS**

Gamma Theta Upsilon Honor Society

American Planning Association (APA)

Association of American Geographers (AAG)

Association of Collegiate Schools of Planning (ACSP)

## **SKILLS AND METHODS**

### **Statistical and Computational Methods**

Multi-level statistics, multivariate statistics, data mining, data analysis with Python and R.

### **Three-dimensional Modeling Methods**

Computer Generated Architecture (CGA) language creation and editing, CityEngine, SketchUp, 3D GIS.

### **Web Developing Methods**

HTML5, CSS

### **Geospatial Method**

GIS, spatial analysis and modeling

### **Language Skills**

Fluent in English and Chinese.

Last Updated March 2021