

JIMMY FENG

p: 9178372772 | e: jfeng1996@gmail | s: jfeng12@vols.utk.edu | w: jimmyfeng.space | g: jimmy-feng.github.io

Third-year Geography PhD Student and Graduate Fellow at the University of Tennessee. Skills include **space-time GIS, Python, R, deep learning, text mining, and spatial analysis** for sustainable and socially equitable development and urban planning initiatives. **My proposed dissertation posits a new theory of access to various human needs** that relates concepts of space, time, and access. Focus is also given to (1) identifying quantitative and qualitative datasets for analysis of five different dimensions of access: availability, accessibility, affordability, accommodation, and acceptability, and their conceptual extensions and (2) how the proposed framework can be implemented with various methods to examine people's situations of access. A case study of food access will be used to apply these ideas in practice. **Formerly a geospatial consultant at (1) National Geographic Society's Geographic Visualization Lab**, delivering maps and reports of location analyses, and strategically managing the development of a dynamically updated land-cover map of the world with partners at Google and World Resources Institute **and (2) the non-profit housing development organization Community Solutions**, leading the implementation of geospatial data analytics for land and property acquisition for affordable housing development.

EDUCATION

University of Tennessee, Knoxville | Anticipated May 2022 | GPA: 4.00

Doctor of Philosophy in Geography; Fast-Track PhD and awarded a four-year Graduate Fellowship

Knoxville, TN

Aug 2018 – Present

State University of New York at Geneseo

Bachelor of Arts in Geography – cum laude | Minors in Asian Studies & Urban Studies

Geneseo, NY

Aug 2014 – May 2018

CURRENT AWARDS

**\$9000 /
Year**

University of Tennessee, Knoxville Graduate Fellowship

Aug 2018 – May 2022

Four-year university graduate fellowship. This comes with a full tuition waiver and teaching assistantship.

Monetary figure represents the fellowship award only

\$8344

Thomas Graduate Fellowship

May 2020 – Apr 2021

Twelve months of support to pursue dissertation research

COURSES

MACHINE LEARNING

Deep Learning
Text Mining
Data Mining
Database & Big Data Tech.
Bayesian Data Analysis
Data Engineering &
Visualization

GIS | SPATIAL ANALYSIS

Seminar in GIScience
Applied GIScience
GIS for Transportation
Quantitative Geography
Programming in GIS
Geographic Information
Management & Process

URBAN DYNAMICS

Seminar in The Livable City
Seminar in Urban Issues
Seminar in Urban/Econ Geog.
Urban and Regional Planning
Space Time Human Dynamics
Geography and Planning in
the European Union

OTHER

Spatial Problems and Policies
Geographic Concept/Method
Environmental Planning
Cartography
Geospatial Software Design
Seminar in Geography of
Transportation

SKILLS

LANGUAGES

English	Native
Cantonese	Native
Mandarin	Basic

MAPPING/VISUALIZATION

ArcGIS (Desktop, Pro,
Online, StoryMap)
QGIS
TransCAD
Visualization: Dash | Plotly |
Matplotlib | Seaborn | Gephi

PROGRAM/SCRIPT

Python: scikit-learn, nltk,
keras, tensorflow, networkx
R: caret, tidyverse, sf,
ggplot
Google Earth Engine
MongoDB
SQL | PostgreSQL

OTHER

HTML
Adobe Creative Suite
Microsoft Office
Photography & Photo Editing
Git
GitHub
Command Line Interface

TEACHING EXPERIENCE

University of Tennessee, Knoxville, Department of Geography

Lead Instructor – GEOG311: Geovisualization and Geographic Information Sciences

Graduate Teaching Assistant – GEOG 411: Intermediate GIS

Graduate Teaching Assistant – GEOG 415: Quantitative Methods in Geography

Graduate Teaching Assistant – GEOG 311: Geovisualization and Geographic Information Sciences

Graduate Teaching Assistant – GEOG 101: World Geography

Knoxville, TN

CURRENT

SP 20

FA 19

SP 19

FA 18; FA 19

- Direct lab sessions; instruct students on fundamental programming, statistical, and research design concepts
- Use R programming to teach students about multivariate regression, hypothesis tests, and data structures
- Teach and assist students in GIS software and fundamental geographic and visualization concepts (e.g., data models, geographic data, spatial autocorrelation, coordinate systems, color theory, data classification)

PROFESSIONAL & RESEARCH EXPERIENCE

Dissertation Research: New Theory of Access to Human Needs

- Reviewed 100+ articles relating to philosophy of space-time, Geographic Information Science, time geography, and geographical access/accessibility to food and healthcare.
- Developed Python scripts to 1) extract 85,000 grocery store reviews for 240 grocery stores in Knoxville, TN, USA from Google Maps and 2) analyze the semantics and topics of reviews with text mining algorithms.
- Successfully submitted a proposal to the university's Institutional Review Board to survey 500 residents about their use of digital applications for grocery shopping, GPS tracks, and attitudes in food shopping

Knoxville, TN

Nov 2020 – Present

Deep Learning for Business Applications

- Deployed a convolutional neural network to classify images of fashion merchandise based on parameters from a grid search for filters, kernel size, stride, and padding. Model accuracy of 88.4% and test loss of 0.597.
- Wrote a TensorFlow-compatible grid search algorithm in Python to tune the number of hidden layers, number of hidden neurons, optimizers, learning rate, and activation function for deep neural networks.
- Developed and tuned a deep neural network to predict gross margin of a product, per unit of time shown, of a given product in shopping network shows

Knoxville, TN

Aug 2020 – Dec 2020

Human Dynamics of Scientific Knowledge

Graduate Research Assistant for University of Tennessee | PIs: Drs. Shih-Lung Shaw & Shellen Wu

- Developed eleven Jupyter notebooks and various Python functions to clean, pivot, and geocode three spreadsheets containing the resume information of 1072 authors across 20 years of articles in the journal *Science* for further social network, natural language processing, and spatiotemporal/GIS analysis
- Created space-time GIS layers and functions in ArcGIS Map 10.8 to query, visualize, and analyze movement trajectories of global author collaboration networks

Knoxville, TN

May 2020 – Jan 2021

National Geographic Society – Geographic Visualization Lab

Geospatial and Cartography Consultant

- Managed the LabelBox interface used by more than 50 satellite imagery experts to manually classify images
- Worked on the development of a dynamically-updated global land cover map for animal and land conservation: <https://drive.google.com/file/d/1JW9Egg05I0gGHC6a6hHR1Hzbh55DARCM/view>
- Created 4 maps derived from satellite imagery for a science expedition in the Russian Arctic Sea

Washington, DC

May 2019 – Sep 2019

How well do various transportation services serve the diversity of neighborhoods in New York City?

https://static1.squarespace.com/static/5ba55b42a0cd277d52808e5c/t/5d8ce55d27bcd752d8b96621/1569514867386/GEOG_515_Report.pdf

- Used ArcGIS's Network Analysis to determine the number of accessible jobs and quality high schools (< 1 hour commute), via public transit, between the 55 census public-use microdata areas
- Automated the calculation of an accessibility matrix at every hour of weekdays and weekends to determine the number of reachable jobs between PUMAs with a custom model in ArcGIS's ModelBuilder
- Network and statistical analyses identified an unequal distribution of public transit service provision in NYC. Results indicate that areas in west Brooklyn and lower Manhattan have the greatest provision of public transit service while areas in the Bronx and east Queens have the worst access to public transit in the city; and that the disparity in the frequency of public transit service between the weekday and weekend is greatest in east Brooklyn and Queens. People living in lowest Manhattan and west Brooklyn also have the greatest access to jobs and quality high schools.

Knoxville, TN

Dec 2018 – May 2019

Community Solutions

Geospatial and GIS Consultant

- Analyzed survey results of 40 residents and 267 households in the Seth Low Housing Projects which found that > 33% suffered from rodent or cockroach infestation and 30% identified mold. Click for full report.
- Reports and analyses of the housing landscape in Brownsville were used to establish a [community land trust](#)
- Constructed a GIS database containing housing, land parcel, zoning, and population data in Brownsville
- Analyzed areas with a large number of housing foreclosures, potential land parcels for acquisition, and distance to train stations with various geospatial tools including hotspot and network analysis in ArcGIS Pro

Brooklyn, NY

Aug 2018 – Jan 2019

New York City Department of Sanitation (DSNY) | Bureau of Recycling and Sustainability

Summer Operations Research Analyst

- Manually verified addresses of 1,200 locations to be included in DSNY's organic waste collection program
- Quantified the demographic and socioeconomic composition of residents in each of 59 community districts to identify recycling performance throughout New York City
- Collected more than 20,000 foam trays throughout lower Manhattan used for a test in DSNY's waste recycling facility to examine the feasibility of recycling polystyrene. [Results led to the foam ban in NYC.](#)

New York, NY

Jun 2016 – Aug 2016