Cheng-Chia Huang

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Summary

- Experienced GIS software user for over ten years.
- Hand-on experience using Python, R, PostgreSQL, HTML, CSS, and JavaScript.
- Self-motivated, detail-oriented, and quick learner.
- Skill set to integrate spatial analysis with data mining and machine learning algorithms.

Education

M.S. | 2015-present | San Diego State University (SDSU)
- Geographic Information Science / GPA: 3.9

M.S. | June 2011 | National Taiwan University (NTU)
- Geography/ GPA: 4

B.S. | June 2007 | National Taiwan University (NTU)
- Major: Geography/ Minor: Political Science, Secondary Education Program / GPA: 3.81

Related Courses

San Diego State University: Geocomputation/GIS Programming with Python/Data Management For GIS/Big Data Science/Web Mapping and Social Media

National Taiwan University: Introduction to Geographic Information System/Cartography and Cartography Lab/ Quantitative Geography and Lab/ Computer Literacy For Educators

Skills

1) GIS software: ArcGIS Desktop 10.5 Advanced, ArcGIS Online, and PostGIS
2) ArcGIS extensions: Network Analyst, Geostatistical Analyst, and Spatial Analyst
3) Analytics tool and other software: Excel, Tableau, Gephi, and MS Office Suite
4) Programming language: Python and R
5) Web programming: HTML, CSS, JavaScript, Leaflet, and Bootstrap
6) Database: PostgreSQL, SQLite, and MongoDB
7) Data mining & Machine learning packages: NLTK, GraphLab, and TensorFlow

Experience

Research Assistant | San Diego State University | 2015-present
- Integrated Census data, ACS data and parcel data using Excel, PostgreSQL database and ArcGIS.
- Collected and managed GPS-based social media data (Instagram) with Python, MongoDB, and WEB APIs.
- Text Clustering and Web Mapping Project:
  - Identified gentrifying areas with text clustering technique.
  - Explored the characteristics of gentrifying areas by analyzing the parcel data.
  - Visualized the research result with Excel, ArcGIS, and web mapping. (http://mappingideas.sdsu.edu/big-group2016/group4/)
- Gentrification typology Project:

- Developed a tool which processes census data and identifies gentrifying areas with PostgreSQL database and PostGIS.
- Visualized and analyzed the results with ArcGIS.

· Image Recognition and sentiment analysis Project:

- Used machine learning technique (TensorFlow) to analyze Instagram photos in gentrifying areas.
- Explored the mood in gentrifying areas with sentiment analysis.

Teaching Assistant of GIS Programming with Python | San Diego State University | 2017 Spring

· Guided student's GIS projects.
· Assisted students in structuring, debugging, and modularizing Python programs.
· Reviewed and commented on student's programming assignments.

Research and Teaching Assistant | National Taiwan University | 2009-2011

· Integrated in-person interviews and literature analysis to explore citizens' perception of urban space.
· Studied the mobility patterns of minority groups in metropolitan areas.
· Leaded discussions for Urban Geography class.
· Managed budgets and administrative works for research projects.

Geography Teacher | Multiple Middle Schools | 2007-2013

· Taught geography and introduced basic GIS concepts.
· Organized campus-wide geographic competitions.
· Organized field trips of physical geography and cultural geography.

Honors

· 2017 Cotton Bridges Award for GIS Techniques
· Second place for the 2017 CISG Robert Raskin Student Competition in the AAG Annual Meeting
· Most Thorough Design and Development Award, 2017 San Diego Big Data Hackathon.
· Graduate Assistantship, San Diego State University (limited number available for qualified student)
· Non-resident tuition waivers for two years (a competitive campus-wide selection process)
· President's Award of College of Science, National Taiwan University (award for top 5% of graduate in geography)

Online Trainings

· **Coursera**: Programming for Everybody (Python)/ Using Databases with Python/ Machine Learning Foundations: A Case Study Approach/ HTML,CSS, and JavaScript
· **ESRI Web Courses:** Basics of Geographic Coordinate Systems/Getting Started with Cartographic Representations/ Getting Started with the Geodatabase/ Creating and Sharing GIS Using ArcGIS Online/ Preparing for Network Analysis/ Network Analysis Using ArcGIS /Exploring Spatial Patterns in Your Data Using ArcGIS/ Solving Spatial Problems Using ArcGIS

Publications

· **Conference paper:**

1) "*Using Instagram Data for Measuring Gentrification Dynamics: An Alternative Way to Identify Gentrification Typology*", – 2016 AAG Annual Meeting, San Francisco, CA, USA
2) "A Social Media Data Mining Approach to Identify Sense of Gentrification"– 2017 AAG Annual Meeting, Boston, MA, USA

· **Book chapter:**

Atsushi Nara, Ming-Hsiang Tsou, Jiue-An Yang, Cheng-Chia Huang (accepted). *The challenges and opportunities with social media and big data for research in human dynamics,* Human Dynamics Research in the Changing World.