YAO-TING YAO

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Portfolio: https://yaotingyao.github.io/

SKILLS

- **Programming:** Python (ArcPy, Pandas, NumPy, Matplotlib, OS, PyTorch, scikit-learn), SQL, R, JavaScript, HTML5/CSS, C#
- **Software:** ESRI products (ArcGIS Pro, ArcMap, ArcGIS Online, ArcGIS StoryMaps, ArcGIS API for JavaScript), QGIS, GeoDa, PostgreSQL/PostGIS databases, Google Earth Engine, GitHub, TerrSet, Leaflet
- **Technical:** Data science coding, automation, web mapping, spatial analysis, cartography, image classification (supervised and unsupervised classification), machine learning (random forest, U-Net)

EXPERIENCE

Research Assistant | Clark Labs | Jan 2022–Present
- Use SQL and Python automation procedure to preprocess 2020 data and run machine learning algorithm to predict 2022 land cover
- Contribute to Coastal Habitat Mapping project with Gordon and Betty Moore Foundation. Create land use map with mangroves, wetlands, and aquaculture by using machine learning algorithms (MLP and Mahalanobis) with supervised classifications

Student Assistantship 2022 User Conference | ESRI | July 2022
- Collaborated with ESRI staff to register attendees and supported technical session monitoring, video, and ESRI store; interacted with conference attendees to ensure they had access to resources and information needed to have successful conference experience

Land Administrator | Keelung City Government and Taipei City Government | Dec 2015–June 2018
- Appropriated public land use planning; communicated with government bureaus to assess their interests and budget under land use regulations
- Interoperated satellite and aerial images to examine illegal land use, such as illegal gravel mining

Project Lead | Taiwan Assoc. of Comprehensive Arts Development | Sept 2010–June 2015
- Led music counseling for social minority groups that included domestic violence support, mental illness recovery, and migrant workers in Taiwan and China.

PROJECT EXPERIENCE

Cropland Maps on Plane-Scope Imagery Using U-Net at National Scale in Zambia (Master Thesis), May 2022–Present
- Create Google Earth Engine base labeling platform and workflow protocol
- Write Google Earth Engine API scripts to automate label and imagery downloader and resample
- Use PyTorch and scikit-learn library to train, predict, and validate model

FEMA Emergency Management Data Migration in PostgreSQL, May 2022
- Mined FEMA National Risk Index, Community Emergency Response Team, and Emergency Management Performance Grants data sets and designed emergency management schema in pgAdmin.
- Explored if Emergency Response Team and funding are well allocated against high-risk hazards at state level

Analyzing Projected Population Change in the México–Lerma–Cutzamala Hydrological Region (MLCHR), May 2022
- Used Shared Socioeconomic Pathways (SSPs) population prediction dataset in México–Lerma–Cutzamala Hydrological Region (MLCHR) between 2010 and 2100.
- Used ArcPy library to create mosaic data set and multidimensional layers for each SSP and used Model Builder to create space–time cube analysis; identified hotspots of projected total population change over time and significant monotonic trends

EDUCATION

M.S. | Clark University | Geographic Information Science| 2021–Present | **GPA: 3.95**
M.S. | National Taiwan University | Geography with Urban Geography | June 2010 | **GPA: 4.0**
B.S. | National Taiwan University | Geography |June 2006| **GPA: 3.7**

RECOGNITION

International Development, Community, and Environment Scholarship | Clark University | $19,992

President's Award of College of Science | National Taiwan University | Award given to top 5% of students