YANNI TIFFANY CAO

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EDUCATION

THE PENNSYLVANIA STATE UNIVERSITY
University Park, PA, May 2016

Master of Science
- **Major:** Geography
- **GPA:** 3.76 / 4.00
- Summer school at Peking university, Beijing, China

THE PENNSYLVANIA STATE UNIVERSITY
University Park, PA, 2014

Bachelor of Science with distinction
- **Major:** Geography focusing on Geographic Information Science(GIS)
- **Minor:** Information & Science and Technology for Earth and Mineral Sciences
- **GPA:** 3.83 / 4.00
- Summer school at **Harvard University**, MA, USA

PROFESSIONAL EXPERIENCE

NATIONAL CENTER FOR ATOMOSPHERIC RESEARCH (NCAR)
Summer 2015

Visitor
- Participate in Python bid data workshop and Thredds server workshop
- Collaborated with scientists at NCAR to create ArcGIS toolbox to read WRF NetCDF files in GIS software with right projection
- Investigated the impact of geographic coordinate system on the weather numeric model on fugitive methane emissions

THE PENNSYLVANIA STATE UNIVERSITY
Geoinformatics and Earth Observation Laboratory
2014 – Present

Research Assistant
- Conduct research on Department of Energy funded project "Continuous, regional methane emissions estimates in northern Pennsylvania gas fields using atmospheric inversions ". The project is referred in White House President Climate Action Plan
- Collected 600 GB geographic data in Marcellus Pennsylvania and New York
- Solved the problem of evaluating emissions from polyline and polygon data and analyzed pipeline methane emissions using GIS modeling
- Created geovisualization web application using HTML and JavaScript and deployed Geoserver and Thredds server to display GIS layers, NetCDF and GeoJSON files
- Presented at Association of American Geographers (AAG) Chicago annual meeting and American Geophysical Union (AGU)
- Won College of Earth and Mineral Science Centennial Graduate Research Award ($1000)
- Won Department Academic Enrichment Funding ($300)

Vegetation Dynamic lab
2013-2014

Research Assistant
- Investigate the effects of climate change on treeline in Denali National Park and Preserve, Alaska: 1953-2005
- Classified remote sensing data using ArcGIS and analyzed tree line change using R
- Created geovisualization application for U.S. National Park Service
- Won the undergraduate research fund

GeoVISTA Center
2014

Research Assistant
- Participated in STempo project to extract new big data and political events trends.
- Organized the news RSS feeds and extract text from news

PlANNING AND INFORMATION CENTER
2013

GIS Intern
- Devoted in Beijing urban planning Road Name Database program, performed spatial analysis, create thematic maps
- Consulted 3D Beijing urban planning system conference

SHAHNGHAI NORMAL UNIVERSITY
2012

PROJECT PRINCIPAL INVESTIGATOR
- Lead the project of Shanxi Province's cultural heritage research and GIS applications
- Won the Excellent Individual Award

AWARDS

2015	**Centennial Graduate Research Award ($1000)**
2015	**Academic Enrichment Funding ($300)**
2015	**Full Scholarship ($42,415 per year)**
2015	**Third prize in business case competition** at Shell
2013	**Erickson Fund (undergraduate research award) in Geography**
2013	**John and Elizabeth Holmes Teas (undergraduate academic achievement) Scholarship**
2012,2013	**Dean's list**
2012	**Excellent Student Volunteer Award**
2011	**Second prize (undergraduate academic achievement)of College scholarship**
2009	**Second Prize in National High School Mathematic Olympic Competition**

PUBLICATION

- Isaacs, R.E., **Cao, Y.,** and Taylor, A.H. The effects of climate change and local site controls on vegetation in Denali National Park and Preserve, Alaska. (In Progress)
- Kim, E.K., **Cao, Y.,** Lauvaux, T. Visualization application of Marcellus methane fugitive emissions. (In Progress)
- **Cao, Y.,** Cervone, G., Lauvaux, T., Barkly, Z., Deng, A.J.,Sarmiento, D. The impact of geographic coordinate system on atmospheric model for fugitive methane emission. (In Progress)

PRESENTATION

- **Cao, Y.,** Cervone, G., Lauvaux, T., Barkly, Z., Deng, A.J.,Sarmiento, D.. (2015). Fusion Geographic Information System Data with State-of-the-art Atmospheric Systems: Application to Methane Source Mapping over the Marcellus Shale formation. *American Geophysical Union fall meeting 2016.*
- **Cao,Y**., Szajkowski, M.. (2015). Visualization web application of the climate change on treeline in Denali National Park and Preserve, Alaska. *The 11th International Conference on Information Systems for Crisis Response and Management*.
- **Cao,Y**., Szajkowski, M.. (2015). Visualization web application of the climate change on treeline in Denali National Park and Preserve, Alaska. *The 1st China Visualization Conference.*
- **Cao, Y.,** Cervone, G., Tayor, A.H., Barkley, Z., Lauvaux, T., Davis, K.. (2015). Methane emission estimation in the Marcellus shale. *Association of American Geographers Chicago annual meeting.*
- Martins, D., Lauvaux, T., Miles N., Richardson S., Barkley Z., Deng A.J., Gaudet B., Davis K., **Cao Y.,** Taylor A.H., Karion A., Sweeney C., Petron, G., Rella, C., Arata, C.. (2015). Continuous, regional methane emissions estimate in northern Pennsylvania gas fields using atmospheric inversions. 5th *North Ameican Carbon.*
- **Cao,Y.,** Isaacs, R., Taylor, A.H.. (2015). The effects of climate change on treeline in Denali National Park and Preserve, Alaska:1953-2005. *94th Annual National Conference and Science Symposium.*
- **Cao,Y**., Isaacs, R., Taylor, A.H.. (2014). The effects of climate change on treeline in Denali National Park and Preserve, Alaska:1953-2005. *Association of American Geographers Tampa annual meeting.*
- **Cao, Y**. Field trip in Qinghai, China. (2013). *Association of American Geographers Los Angeles annual meeting.*

LEADERSHIP & VOLUNTEER

INNOVATION & INTERDISCIPINARY COLLABORATION CUMMUNITY (IICC)
2015 – Present

PRESIDENT
- Facilitate interdisciplinary communication on academic topics, to promote critical and creative thinking, and to spark innovation and support innovative projects in science and technology at Penn State
- Organized more than 20 monthly interdisciplinary workshops
- Initialized the WeChat platform and developed more then 100 members in a month

LEADERSHAPE
2015

MENTEE
- Participated in LeaderShape program to share my passion about releasing the power of interdisciplinary collaborations and helping international students involve in local culture.
- Learned to lead with integrity, healthy disregard for the impossible, leadership, ethics, vision, community, possibility and relationships

GLOBAL ENGAGEMENT LEADERSHIP EXPERIENCE (GELE)
2013

REPRESENTITIVE
- Participated in multiculture and global leadership discussions and activities
- Represented international students to show the local culture

OPEN STREET MAP

2013

GIS VOLUNTEER

- Digitize open street map to provide humanitarian map for Typhoon Haiyan hazard response.

SHANGHAI LUXUN MUSEUM

2010 - 2012

VOLUNTEER NARRITOR

- Volunteered as certificated narrator in the state key museum
- Supervised volunteer's selection and tanning for university students
- Provided more than 200 hours service and received high evaluation from the tourists

SHANGHAI SUNSHINE HOUSE FOR PEOPLE WITH DISABILITY

2012

VOLUNTEER TEACHER

- Designed classes for people with intellectual disability
- Supervised volunteers' selection and tanning for university students
- Won the excellent volunteer award

OTHER DIMENSIONS

- Like Nutella
- Like traditional Chinese Han costume
- Enthusiastic traveler: Traveled 11 counties in a year

SKILLS & EXPERTISE

- **Classes:** Human/Physical geography, Remote Sensing, Cartography, Spatial Statistic, Data Mining
- **GIS:** ArcGIS, QGIS, ENVI.
- **Data Analysis**: R, python, GeoDa, ArcGIS, Weka, Minitab, SPSS and Excel.
- **Database:** Microsoft Access, SOLite, PostgreSQL.
- **Web Development**: JavaScript, HTML5, CSS, UI Design.
- **Platform**: Linux, Windows, IOS.