

YANNI TIFFANY CAO

Martin Street, State College, PA, 16803
(814) 876-**** yvc5268@gmail.com www.yannicao.com

SUMMARY

/GIS/Data analysis/Visualization/Cartography/Data mining/Business/Energy/Shale gas/Greenhouse gas/

SKILLS & EXPERTISE

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

EDUCATION

THE PENNSYLVANIA STATE UNIVERSITY

University Park, PA, May 2016

Master of Science

- **Major:** Geography focusing on Geographic Information Science(GIS)
- **GPA:** 3.83 / 4.00
- Visualization summer school at Peking university, Beijing, China
- Class highlight: Geoinformatics, Data Mining, Regression, Web Mapping

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

- Participated in Python big data workshop and Thredds server workshop
- Collaborated with NCAR scientists to modify ArcGIS toolbox to read large scientific dataset using Python

THE PENNSYLVANIA STATE UNIVERSITY

Geoinformatics and Earth Observation Laboratory & Institute of CyberScience
2014 – Present

Research Assistant

- Conducted research on Department of Energy (DOE) funded project. The project is referred in White House [President Climate Action Plan](#)
- Collected 600 GB geographic data in Marcellus Pennsylvania and New York
- Used different data mining algorithms to predict methane emissions in fracking industry
- Used GIS modeling to estimate greenhouse gas emissions
- Created geo-visualization 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) meeting
- Won College of Earth and Mineral Science Centennial Graduate Research Award (\$1000)
- Won Department Academic Enrichment Funding (\$300)

GeoVISTA Center
2014

Research Assistant

- Participated in news big data project to extract sentences and predict events trends
- Investigated the spatial-temporal patterns from the Coursera users by using PostgreSQL
- Analyzed and visualized the effect of climate change on Alaska using ArcGIS and R

AGRICULTURAL BANK OF CHINA (ABC)

2015

Intern

- Bank lobby manager assistant
- Help customers fills out the forms, recommend financial products

SHELL

University Park, PA 2015

Team Leader

- Invited to Shell Business Case Competition, presented business plan
- Won the third prize

**BEIJING URBAN PLANNING
AND INFORMATION CENTER**
Beijing, China, 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

AWARDS

- 2015 **College of Earth and Mineral Science Centennial Graduate Research Award (\$1000)**
- 2015 **Full Scholarship (\$42,415 per year)**
- 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**
- 2009 **Second Prize in National High School Mathematic Olympic Competition**

PUBLICATION & PRESENTATION

- 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)
- **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.**, Cervone, G., Taylor, A.H., Barkley, Z., Lauvaux, T., Davis, K. (2015). Methane emission estimation in the Marcellus shale. Association of American Geographers Chicago annual meeting.

LEADERSHIP & VOLUNTEER

**INNOVATION &
INTERDISCIPLINARY
COLLABORATION
COMMUNITY (IICC)**

2015 – Present

LEADERSHAP

2015

**GLOBAL ENGAGEMENT
LEADERSHIP EXPERIENCE**

2013

SHANGHAI LUXUN MUSEUM

2010 - 2012

**SHANGHAI SUNSHINE HOUSE
FOR PEOPLE WITH DISABILITY**

2012

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 than 100 members in a month

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

REPRESENTATIVE

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

VOLUNTEER NARRATOR

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

VOLUNTEER TEACHER

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

OTHER DIMENSIONS

- Love travel: Traveled 16 countries.
- Like Nutella. It is yummy.