SHAN YE

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🎓 EDUCATION

University of Wisconsin-Madison, Madison, WI   2018 – Present

Ph.D. Geoscience，minor in Computer Science

- Cyberinfrastructure and software development for geoscience
- Spatiotemporal data analysis for paleoclimate & data-model comparison

University of Tulsa, Tulsa, OK   2016 – 2018

M.S. Geosciences

- Numerical simulation (Finite Element Method) in geomechanics and structural geology
- Geospatial analytical applications to induced seismicity research

University of Michigan, Ann Arbor, MI   2013 – 2015

B.S. Earth and Environmental Sciences

Pennsylvania State University, University Park, PA   2011 – 2013

 Geographic Information System

👥 EXPERIENCE

University of Wisconsin-Madison, Madison, WI   2018 – Present

EarthCube Research Assistant   Software developer, data analyst

Sparrow-Cosmo branch development（https://sparrow-data.org）

- Built a spatial database for geochemical data with PostgreSQL.
- Backend development in Python. Managed to upload more than 10,000 legacy data.
- Writing API with Flask to extract data from the Sparrow database.
- Frontend development with React and Leaflet. Built data submitting form and visualization interfaces.

Macrostrat age model validation（https://macrostrat.org）

- Creating new polygons to enhance the spatial resolution of Cretaceous America for at least 4 times
- Processed dinosaur data from PBDB in R and QGIS and joined them with the Macrostrat database. Validating the Macrostrat age model with dinosaur data.
- Located 8 regions of significant age discrepancies and conducted the assessment. Constructed a state-of-art compilation of Cretaceous dinosaur diversity spatiotemporal series with ArcGIS (ArcPy).

GeoDeepDive data mining（https://geodeepdive.org）

- Utilizing NLP to extract spatiotemporal data regarding Ice-rafted Debris (IRDs) of last 5 million years from academic literature.
- Located 30 IRDs with their depth, age and coordinates from 1000 random geoscience sample papers.

Chinese Academy of Sciences (Institute of Geology and Geophysics), Beijing   2015 – 2016

Intern   Researcher in geophysics

Seismic data analysis and visualization regarding shale gas reservoirs

University of Michigan, Ann Arbor, MI   2013 – 2014

Research Assistant   GIS analyst and WebGIS developer

- 3D modelling of Michigan Basin in ArcGIS based on well log data.
- Hot spot analysis in R and ArcGIS and located 9 potential pollution zones from shale gas industry.
- Built an interactive map with Leaflet to showcase Michigan fossils and minerals. The map was once chosen to be on the homepage of the department website.

⚙ IT Skills

- Programming: Python, C++, Java, JavaScript
- Data Analysis: R, Mathematica, MATLAB, Python (Pandas, Numpy)
- Web Maps: Leaflet, D3, Mapbox, ArcGIS Storymap, React, HTML, CSS
- GIS Software: ArcGIS (Desktop, Pro, Online), QGIS, GeoDa, PostgreSQL/PostGIS
- Other Software: Petrel, ABAQUS, Illustrator, Photoshop, CorelDRAW, Ableton
- Database: MySQL, PostgreSQL, Access, Esri Geodatabase

▣ Teaching

University of Tulsa, Tulsa, OK   2018 Spring

Temporary Instructor   GEOL 4083（GIS for geologists）

Taught when the professor was not available. Topics covered: GIS data models, raster data processing, digitizing old maps, algorithms for map generalization, topological rules and errors, spatial interpolation, etc.

University of Michigan, Ann Arbor, MI   2014 – 2015

TA and Group Facilitator   UC 270（Social Justice）

Topics covered: Application of GIS in social science research, and map design (static and interactive) for social science report and outreach. Guided a study group to complete a research on human trafficking issues.

Pennsylvania State University, University Park, PA   2012 Fall

Teaching Intern   GEOG 363（GIScience core course）

Edited lab instructions for new version of ArcGIS (10.2). Provided assistance in lab sessions.

♡ Awards and Scholarships

1st Place, GIS Day Mapping Contest, Esri China	2019
Weeks Assistantship, Department of Geoscience, University of Wisconsin-Madison	2018 – 2019
3rd-Place Prize, "Awesome Geology" Outreach Contest, CUG and China Geology Survey	2018
Recognition of Global Excellence, University of Michigan	2014
University Honors, University of Michigan, 2 times	2013 – 2015
Erickson Fund in Geography, Pennsylvania State University	2013
Dean's List, Pennsylvania State University, 3 times	2011 – 2013

🏛 Organizations

AAPG, American Association of Petroleum Geologists	2016 – Present
AAG, Association of American Geographers	2012 – Present
SEPM, Society for Sedimentary Geology	2016 – 2018
NACIS, North American Cartographic Information Society	2012 – 2017
TGS, Tulsa Geological Society	2016 – 2018

ⓘ Miscellaneous

- Translator of textbook Exploring Geology by Reynolds et al., English to Chinese (2019, in prep)
- Question setter of the 2019 Guangzhou Popular Science Knowledge Competition for Primary and Secondary School Students (50 geoscience and geography questions)
- President of AAPG University of Tulsa Chapter (awarded L. Austin Weeks grant)
- Imperial Barrel Award 2017 competition: Represented University of Tulsa as the structural geologist and GIS analyst. Located 3 oil prospects offshore New Zealand from real-world industrial data.
- Outreach & pop-sci writer on multiple online-platforms and magazines in China, including Zhihu, thePaper, China National Geography, Human & Nature, Open Classroom, etc. More than 5.5 million cumulative views since Jan. 2018. Published 4 pop-sci e-books with Zhihu (one as the sole author).