

# SHAN YE

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## 🎓 EDUCATION

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

*Ph.D.* Geoscience, minor in Computer Science

- 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

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**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

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- Data Analysis: Python, R, Mathematica, SQL
- Web Maps: Leaflet, D3.js, Mapbox, ArcGIS Storymap, React, HTML, CSS
- GIS: ArcGIS (Desktop, Pro, Online), QGIS, GeoDa, PostgreSQL/PostGIS
- Other Software: Petrel, ABAQUS, Illustrator, Photoshop, CorelDRAW, Ableton

## TEACHING

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**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

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*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

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*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

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- Invited lecturer on cartography at ArcGIS Developer Summit (online), Esri China, 2020
- Data science help desk at EGU virtual conference, 2020
- 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
- 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.