Stace D. Maples

Location-Based Technologies Expert, Spatial Educator, Evangelist, Habitual Tinkerer, Lifetime Learner & Geospatial Swiss Army Knife
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@mapninja
https://github.com/mapninja
https://github.com/StanfordGeospatialCenter
http://library.stanford.edu/research/stanford-geospatial-center

References

On Request

Objectives

- To allow researchers, scholars and do-gooders to do more meaningful work by helping them investigate, quantify and solve spatial problems with technology.
- To concern myself with issues of import to academic researchers, from building information literacy skills programs tailored to cutting-edge use of geospatial data and technologies, to issues of discovery, access and persistence of the data sources and products of research and teaching in Higher Education.
- To surround myself with people smarter than me.
- To always be doing something at least moderately amazing.
- To elevate the work of impactful, brilliant people.

Expertise

- More than 20 years of experience using Geographic Information Systems and geospatial data and technology for research and teaching, the last 5 spent as Stanford University's Geospatial Swiss Army Knife, the previous 10 at Yale University.
- Expertise in a broad range of geospatial and supporting software and hardware
    - Esri GIS Software Ecosystem, QGIS, OpenGeoportal, Geoblacklight, Geoserver, GDAL, DNRGPS, ENVI, etc…
    - Web-based GIS platforms, APIs and services, including Google Earth Engine, Carto, Mapbox, OpenStreetMap, OpenLayers, Leaflet.js, etc…

    - Development and scripting languages, including Python, JavaScript and Unix Shell
    - Operating systems, including MacOS, Windows Desktop and Server, Debian GNU/Linux, Ubuntu GNU/Linux, and RHEL
    - Application and database platforms, including Apache, IIS, Tomcat, MS SQL Server, MySQL, PostgreSQL, PostGIS
    - Web markup, application platforms and data formats, including HTML, PHP, JavaScript, XML, Markdown, (Geo)JSON, KML, GML and others
    - Consumer grade GPS Equipment, including extensive experience with Garmin and Trimble hardware
    - Survey grade mapping equipment, including Dual-Signal GNSS/GPS systems, RTK GPS Systems and total station survey equipment
    - Mobile Phone/Tablet hardware and software management, including Android, iPhone, ADB, side-loading, unlocking and rooting techniques
    - Android and iOS data collection software, systems and strategies for field data collection, including Collector for ArcGIS and XForms/XLSForms based systems (ODK, Survey123, EpiCollect5, etc…)
    - Multimedia editing and production.
    - Sub-Surface remote sensing techniques, software and hardware, including Ground Penetrating Radar, Magnetometry and Electric Resistivity
    - Archaeological excavation and survey data collection methods
    - Kite and Balloon Aerial Photography techniques (I come with my own IR/RGB aerial rig)

- Planning, implementation and management of long-term GIS projects
- Designing and implementing integrated, multi-user geospatial field data collection systems
- Digitization of cartographic materials, including rare and physically sensitive collections
- Cartography for research and scholarly publication
- Writing technical content
- Designing and delivering GIS training programs
- Supporting high level use of spatial data, technology and methods in research and teaching
- Administration, distribution and management of enterprise GIS software and services in an academic and research environment
- Particular enthusiasm for supporting field data collection in remote and challenging environments

Professional Experience

Geospatial Manager

Stanford Geospatial Center, Branner Earth Sciences Library, Stanford University

Jan 2015-Present

- Head of the Stanford Geospatial Center, a center that supports 1,000+ students and faculty with over 100 workshops, class lectures, and presentations per year and nearly 6,000 one-on-one reference consultations via email, phone and in-person
- Sustain and strengthen the GIS program as the primary provider of geospatial technology services, research consultation, and user education to Stanford University (SU) students, faculty and staff from all departments across campus
- Oversee the work of the Geospatial Reference and Instruction Specialist, two GIS Assistants as well as numerous hourly and student workers
- Design and deliver instruction to geospatial users, assisting in the integration of geospatial skills into the curriculum
- Collaborate with library staff and faculty members to develop and implement new directions and long-range plans for improving the provision of geospatial services including: creation of curriculum-specific teaching materials and workshops for different disciplines; providing outreach and support services to the main and branch libraries, and providing GIS support specifically for the upcoming David Rumsey Map Center; Working in collaboration with the programmers of the Digital Library Systems and Services group (DLSS) and the Scientific Metadata Librarian on the development of the library's geospatial discovery environment, GeoBlacklight
- Support the geospatial operations in Branner Library, which include: selecting GIS software, data, hardware and peripherals; training and supervising a student staff person to assist with geospatial services and Website maintenance; managing campus-wide GIS software licenses; and maintaining high-performance computing resources, dedicated to GIS
- Cultivating relationships with industry partners, beyond their role as vendors, to enrich access to cutting edge technology for researchers at Stanford University.

DJ/Radio Personality

KZSU 90.1 FM, Stanford

Jan 2016 - Present

https://soundcloud.com/mapninja
https://zookeeper.stanford.edu/?action=viewDJ&seq=selUser&viewuser=1428

Music DJ on the Wednesday 3-5pm **Library Show** playing everything from Conlon Nancarrow's experiments with composition beyond human ability for player piano to the latest psych-rock from Ty Segall. Occasional interviews have included "Hannibal" author Patrick N. Hunt, slowcore luminary Kris Wheat of Bedhead and Angie Lee, HigherEd liason for GIS behemoth, Esri. Regular music reviewer. Instructor in the KZSU Air Clear Training curriculum for new DJs. Writing, voice and production of PSA and promotional spots.

Geographic Information Systems Specialist & Instruction Coordinator

Yale University Library Map Department

Sept 2010 - Jan 2015

- Creation, coordination and teaching of The Yale Map Department's Geospatial Technology Instruction Program
- Administration of Esri, Google Earth/Maps and CartoDB Enterprise Education Site Licenses
- Coordination of student and full-time staff on departmental projects
- GIS data collection development
- Technical support for the use of GIS and Geotech in research and teaching.
- Collaboration in Faculty research & curriculum development
- Research GIS infrastructure administration, including system and database administration of 8 distinct ArcGIS Server systems
- GIS and Geotech related event coordination
- Print Map reference and research services
- Management of digitization workflows
- Management and circulation of GPS and field data collection equipment collection

Geographic Information Systems Assistant & Instruction Specialist

Yale University Library Map Department

Aug 2005 - Sept 2010

- Creation, coordination and teaching of The Yale Map Department's Geospatial Technology Instruction Program
- Technical support for the use of GIS and Geotech in research and teaching
- Collaboration in Faculty research & curriculum development
- Research GIS Infrastructure Administration, including System and Database Administration

Research Assistant / Teaching Assistant

University of Texas at Dallas

Aug 2003 to Aug 2005

- Planning and execution of various research projects
- GIS software (ESRI) support and instruction
- Creation, editing and maintenance of geographic data sets in several formats
- System administration and GIS lab management
- Preparation and grading of curriculum
- Lecture and lab presentations
- Courses:
    - Introductory GIS
    - GIS for Social Sciences
    - World Regional Geography
    - Transportation & Logistics
    - Internet Mapping with ArcIMS

Owner/Manager

Skin&Bones

http://www.skinandbones.com

June 1989 – Sept 2003

- 15 years of Supervisory/Managerial experience in a Small Business (8-15 employees) environment
- Human resources, payroll, budget planning and implementation
- Licensing and government oversight requirement fulfillment
- Customer relations, sales
- Vendor relations, purchasing
- Advertising and promotion strategy, design and copy
- Web-master since 1996

Teaching Experience

GeoTech, Bishop Dunne High School, Dallas, TX. 2010-present.

Attendee/Instructor. Introductory level workshop topics for K-12 teachers to help expand the use spatial technologies in research and teaching. Honestly one of my favorite things I do.

EARTH 1B: Know Your Planet: Big Earth, Stanford University - Winter Quarter 2018

Foundations of "Big Earth" data, including public and private-sector Earth imaging services, crowd-sourced global-scale geospatial data, trajectory and data streams. Visualization as analysis,

Wrigley Field Program in Hawaii, Stanford School of Earth, Energy & Environmental Sciences, 2016

Created and delivered content for a 3-day QGIS Spatial Analysis Module for the Wrigley Field Program, November 2016. Four components, including: An Introduction to Spatial Analysis; Geoprocessing and Spatial Data Carpentry; Imagery Analysis; and Field Data Collection. Data acquisition support from DigitalGlobe.

Stanford Summer Research College (SRC), 2015-present

Created and delivered content for a 3-day Spatial Analysis Bootcamp, using ArcGIS Suite of software, and including: An Introduction to GIS with ArcGIS, Geoprocessing with ArcGIS, Data Creation Workflows with ArcGIS, and Field Data Collection with ArcGIS.

The Stanford Geospatial Center GIS Workshop Series, 2015-present

An ongoing workshop series, with the objective of delivering practical skills in GIS data creation, management, analysis and presentation, specifically for research and teaching. Workshops are delivered on either QGIS, ArcGIS, ArcGIS Pro or R Studio depending on user needs and interests.

MODS Summer Graduate Student Orientation Program, Yale School of Forestry & Environmental Studies, 2006-2014

Applied GIS for Urban Forestry applications including field data collection, management and analysis, using the ongoing and Urban Resource Initiative’s New Haven Street Tree Survey. Students are oriented to the technology stack used (currently ArcGIS Server and Collector for ArcGIS based), trained and deployed for street tree survey field data collection, then provided instruction in the management and analysis of collected data.

Geospatial Law & Policy, Yale Law School, 2010. Co-taught with Dr. Richard

Brooks.

Seminar exploring the intersection of geospatial and location-based technologies, and the legal system. Guest lectures included: Pete Schreiber, Esri General Counsel; Mikel Maron, mapgive.state.gov and OSM Foundation; Dr. Scott Edwards, Project Manager, Science for Human Rights, Amnesty International.

GIS for Archaeology, Yale University. Co-taught with Dr. William Honeychurch

An introductory level credit course in applications of Geographic Information Systems and location based technologies in archaeological investigation and research.

Geophysical Prospecting Methods for Archaeology, Yale University. Co-taught with William Honeychurch.

The application of various geophysical prospecting methods in non-invasive investigation of archaeological remains. Including: Survey design, Resistivity Methods, Magnetic Methods, Ground Penetrating Radar, data fusion and interpretation.

The Yale Map Department GIS Workshop Series, 2005-2014.

An ongoing workshop series, with the objective of delivering practical skills in GIS data creation, management, analysis and presentation, specifically for research and teaching. Workshops are delivered on either ArcGIS, or QGIS, depending on user needs and interests.

Education

Carpentries Trainer Certification Workshop Feb 2018

http://www.datacarpentry.org/

FOSS4GNA 2019 - Using the other fun parts of PostgreSQL along with PostGIS

FOSS4GNA 2019 - How to create STAC catalogs and APIs from your own data

FOSS4GNA 2019 - Satellite Imagery Analysis with Python

FOSS4GNA 2018 - Satellite Imagery Analysis with Python

FOSS4GNA 2017 - Browser-based Geoprocessing with Turf.js and Leaflet

FOSS4GNA 2017 - Slippy maps, you complete me: A friendly step-by-step guide to serving up your own slippy web map tiles with tilehut.js

FOSS4GNA 2017 - Hands on with GDAL/OGR: a Gentle Introduction to Command Line GIS

FOSS4GNA 2017 - From WebODM to QGIS

SCRUM Product Owner Certification, Stanford University, Nov 2016

Intro to SCRUM, Stanford University, Nov 2016

QGIS Academy, DelMar College , 2015

Google Geo for Good Summit- 2015, 2016, 2017, 2018

Google Earth Engine Summit- 2015, 2016, 2017, 2018

Google Geo for Higher Ed Summit, 2013

Esri T3G (Teachers Teaching Teachers GIS) Institute, June 13-18th 2010

ESRI Training, July 2009

- Data Management in the Multiuser Geodatabase
- ArcGIS Server Enterprise Configuration and Tuning for SQL Server

University of Texas at Dallas - 2005

- M.Sc. in Geographic Information Sciences & Remote Sensing
- Graduate Certificates in Geographic Information Systems and Remote Sensing

National Park Service / Dept. of the Interior - 2004

- Certification - Geophysical Survey & Prospection for Cultural Resource Management, including Electric

Resistivity, Magnetometry, GPR, photo analysis and other geophysical methods for archaeological survey.

Southern Methodist University -1997

- B.Sc. in Anthropology/Archaeology, Minor in Latin American Studies.
- Graduated with Honors
- Departmental Distinction Award
- Clements Award for Southwestern Studies
- Edward I. and Peggy C. Fry Award for Academic Excellence in Undergraduate Anthropology

Ft. Burgwin Archaeological Field School - 1996

- Archaeological field methods and writing
- Total Station survey
- GPS Survey

Selected Projects

BigEarthHacks SE3 2018

https://bigearthhacks.stanford.edu/

GISDay@Stanford

Stanford's annual celebration of all things location, including the cutting edge of geospatial technologies. Development, planning and coordination of the event, 3 years running. The schedules speak for themselves. Off-the-hook fun for geonerds.

2015 - https://www.eventbrite.com/e/gisdaystanford-tickets-19264666135#
2016 - https://stanfordgisday2016.sched.com/
2017 - https://gisdaystanford2017.sched.com/ 2018 - https://gisdaystanford2018.sched.com/

Nomadic Pastoralist Settlement Survey

see: "Surveying Nomadic Health" http://trajectorymagazine.com/digitalglobe-foundation-celebrates-10-years/

StoryMap (beta): https://arcg.is/0XGrDO

Over the summer of 2017, we used hyper-recent satellite imagery obtained from the DigitalGlobe Foundation, Open Source software and very large, high-resolution monitor arrays to do manual reconnaissance, identifying

active settlements of the Nyangatom, a nomadic pastoralist population in Southern Ethiopia. The survey was the basis for first randomized public health survey ever conducted on the group. The Stanford Geospatial Center is now working with School of Medicine researcher, Hannah Binzen Wild, to incorporate lessons learned in the field and to automate the use of high-cadence satellite imagery, machine learning in identifying the locations of active nomadic pastoralist settlements. Remote in the extreme, widely dispersed and highly mobile, the difficulty of conducting complete settlement surveys has resulted in the Nyangatom, and populations like them, being missed by most public health needs assessments in the past. Wild's aim is to perform the first randomized surveys on these types of populations in order to provide baseline data for the evaluation of future public health interventions with populations of these types.

Outbreak Responder

https://play.google.com/store/apps/details?id=com.stooltool
The Outbreak Responder is a decision-support and epidemiology platform for use during diarrheal disease outbreaks. There are two components. The first component is a rehydration calculator that automates World Health Organization guidelines for how to assess and rehydrate a patient with diarrheal disease. The calculator is designed to be used in 30 seconds and does not require an account or connectivity. The second component is intended for the Outbreak Response Team that may include epidemiologists, public health administrators, and clinicians. This component requires a login/password. Patients are organized in a registry with icons that designate disease severity. Each patient record contains basic demographic, clinical, laboratory, and geospatial data. All aspects of the platform are encrypted and secure to industry standard. Data are visualized on a secure dashboard that helps administrators optimize resource allocation during rapidly evolving outbreaks. The dashboard also helps clinicians improve the quality of care delivered at the bedside. The design leverages geospatial mapping to identify critical actionable data. Outbreak Responder is designed for use in developing countries with high diarrheal disease burden. It was built by an international team of clinical and computer science experts led by Eric Nelson, MD., PhD at Stanford University.

The Urban Resource Initiative New Haven Street Tree Survey

A Continuing project to map the more than 30k street trees in The City of New Haven. Initial conceived as a field data collection exercise for the Urban segment of The Yale School of Forestry's 3-week graduate orientation, "MODS," this is an ongoing survey, now in it's 6th year. The project's core is an ArcSDE/MSSQL database of the 30k tree "locations" and more than 70k inventory records associated with them. As software platforms have evolved and suitable hardware has become ubiquitous, the project has gone from using a small suite of Trimble Juno units with ArcPad's "Check-in/Check-out" methods, to now creating feature services from ArcGIS for Server, through ArcGIS Online for Organizations, and be deployed for offline editing through Collector for ArcGIS on iOS and Android. The latest iteration of the project has made it possible for students to use their own equipment to survey, without incurring cellular data costs, and freeing the project from the cost of purchasing and maintaining equipment.

Photogrammar

photogrammar.yale.edu
Yale University's first NEH Digital Humanities Start-Up Grant [HD-51421-11]
"The Photogrammar Project is a Yale University Public Humanities Project designed to offer an interactive web-based open source visualization platform for the one-hundred and sixty-thousand photographs created by the federal government from 1935 to 1943 under the Farm Securities Administration and Office of War Information (FSA-OWI)."

Working closely with other members of the Photogrammar Team, I have been responsible for the creation and management of the geospatial data for the project. This has included geocoding ninety-thousand images (~5000 unique locations) using various geocoding platforms and APIs. The bulk of the geocoding work was done using Tulane University's Geolocate API, through Google/OpenRefine. Work also included the attachment of location information to the existing collection metadata and association with historic county boundary data, using SQL, for visualization in the CartoDB platform.

Publications

A selection of publications, including those containing my cartography, can be found at:
https://scholar.google.com/