RESUME
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CAREER OBJECTIVES

To design, develop, implement, and train end-users on novel desktop, mobile, and web GIS systems, applications, and services to improve their efficiency and experience for mapping and managing assets.

EDUCATION

University of WI-Madison, WI

Master of Science: Geographic Information Systems/Cartography—Web Map Programming

Focus: *Mobile routing in JavaScript, Java, and SQL libraries using postgresql databases.* **Expected Completion: Fall 2018**

Continuing Education

Programming

Ongoing – NoSQL Databases, C#, PHP, HTML, CSS, JavaScript, & JQuery self-taught online training
2015 - Pennsylvania State's online self-paced course, GEOG 585, "Open Web Mapping"
2015 & 2016 - WLIA Annual Conf. 4-hour workshop: "Advanced Python"& "Python Classes"
2015 – Annual Conf. MN GIS/LIS 4-hour workshops: "ArcGIS for Javascript API"
2015 – Annual Conf. MN GIS/LIS 4-hour workshops: "Using Geoprocessing Services with the ArcGIS Javascript API"
2014 & 2016 - WLIA Annual Conf. 4-hour workshop: "Introduction to Python for ArcGIS 10.x"
2013 - eGIS Associates' "Introduction to the ArcGIS Javascript API Online," & "Introduction to OpenLayers," (3 days)

ArcGIS for Server & SDE Geodatabase Management

2013 - Esri's "ArcGIS for Server: Site Configuration & Administration," (3 days);
2013 - Esri's "ArcGIS for Server: Sharing GIS Content on the Web," (2 days)
2013 - Esri's "Configuring & Managing the Multiuser Geodatabase," (3 days)

University of WI-Madison, WI

Graduate Certificate: Geographic Information Systems **Aug. 2012; 3.9/4.0 GPA**

Internship Focus: *Spatial prediction of mercury concentration in the Great Lakes drainage basins from stream water quality data & remotely-sensed leaf area index as input for climate hydrologic models using Python & R languages.*

Master of Science: Conservation Biology & Sustainable Development **December, 2011; 3.4/4.0 GPA**

Thesis: *Using R to model and predict sandhill crane & power line collision risk in agricultural-wetland landscapes in WI.*

Bachelor of Science: Wildlife Ecology, Certificate: Environmental Studies **May, 2006; 3.2/4.0 GPA**

WORK EXPERIENCE

GIS Analyst/Developer, *Professional Services, RAMTeCH Software Solutions, Stillwater, MN* **(Feb. 2017-Present)**

Applied Agile product development methodology to design, build, & release python & sql utility migration toolsets accessing oracle 11g/12g SDE databases, ArcMap & Pro desktop tools. Lead general & detailed user-training/demos for client support & project work. Researched new Esri utility network extension built in SQL server databases & lead workshop for 20+ users to test workflows using Amazon Web Service machines.

GIS Programmer Analyst, *GIS & Facility Operations, MN Power, Duluth, MN* **(April 2016-Present)**

Coordinated dev. & test Web AppBuilder installations; Updated documented workflows for designing & publishing custom Survey123, Arc Collector, and WebMaps; trained staff on using Model Builder, Python, & ArcGIS Online with existing utility editing, work order, & field tools systems.

GIS Specialist, *City of Duluth, Engineering Division, Duluth, MN* **(Feb. 2015-April 2016)**

Coordinated full lifecycle software & database development for mapping & web data-entry applications with Python & ArcGIS Online. Edited gas, water, storm GIS data. Managed editing, training, and metadata tools for versioned SQL Server SDE database editing practices.

GIS Specialist, *Bad River Tribe, Natural Resources Dept ., Odanah, WI* **(Oct 2012-Feb. 2015)**

Organized & designed GIS data in databases for all depts., planned & published data-entry webmaps, & updated tribal website.

Web/GIS Technician, *State Cartographer's Office, University of WI-Madison: Madison, WI* **(May 2012-Oct 2012)**

Customized Python scripts & add-ins to create natural basemaps of WI & updating the Cartographer's website.

GIS Project Assistant, *School of Nursing, University of WI-Madison: Madison, WI* **(Jan. 2010-Oct 2012)**

Developed Python algorithms to compare water quality interpolated data related to how map readers perceived their water quality risk.

PROJECT & PERSONNEL MANAGEMENT

Full Cycle Project Development & Implementation: Coordinated GIS User Needs Assessment & Implementation Plans for 19 projects for software development, database development/improvements, training, & website improvements for City of Duluth IT Dept. & Public Works & Utilities Dept beginning in 2015.

Training: Taught introductory Python, JavaScript, GPS & GIS sessions for small group workshops on: (1) using new mapping & GPS programs (2) testing software including ArcGIS Desktop & opensource QGIS, (3) setting up development environments for Python & JavaScript, (4) process for updating website front ends, & (5) GIS user needs assessments, (6) Agile methodology, and (7) Esri's Utility Network Extension for electric, water, and gas domains.

Staff Supervision: Oversaw & trained Oversees staff, student GIS technicians, LTE staff, and volunteers on GIS data entry procedures for UW Nursing School mapping projects, short-term land ownership projects with the Bad River Tribe, and python code revisions.

Grants & Writing: Published five blogs on gas editing, tracing, workflows, and data models for Esri's new Esri utility network; Awarded **$127,000** from *the Federal Emergency Management Agency Pre-Disaster Mitigation Program (2015).* Awarded **$5,200** from *ESRI for ArcMap online training through the Conservation Grant Program (2012);* Awarded grants to fund M.Sc. research & provide professional development: **$10,000** from the *Animal Welfare Institute (2010)*; Awarded **$1,025** from research organizations for mapping (2010-2011).

GIS Data Security: Implemented new ArcGIS Server security protocol for publishing GIS services online; Researched & re-wrote external & internal data-sharing agreements & policies for the Bad River Tribe.

DATA MANAGEMENT & PROGRAMMING KNOWLEDGE

Database & Data Structures Management:

- Designed database structure to handle migrating source databases into different target data models.
- Rebuilt geometric networks for clients. Resolved corrupt databases in SQL server, postgresql, or oracle database.
- Implemented new ArcGIS Server & published GIS secured web services for the Bad River Tribe; Expanded existing GIS map services to multiuser, versioned online feature editing & Python-built geoprocessing services for City of Duluth.
- Managed multiuser editing in ArcGIS 10.x SDE databases-2008/2013 Microsoft SQL Server for Tribe & City of Duluth, and large electric and gas utilities.

Programming:

- Coordinated in designing Python migration toolset to manage disparate source databases to a single target database handling all mappings in an oracle 11g database to expedite code creation for migrating all sources.
- Created Python routines to download & extract ArcGIS Online data & images from a Survey123 app & export to a PDF with hyperlinked images and a summary of data from multiple related tables within a geodabase.
- Developed Python-based geoprocessing services to take web entry to update the SQL Server database & ArcGIS Server.
- Script opensource & ArcGIS programs to manipulate, re-write, or edit raster & vector data for use in GIS analysis & remote sensing apps (batch-processing image enhancements & transforms, & radiometric/atmospheric correction).
- Used spatial statistics & mapping programming modules in R to develop regression algorithms for predicting mercury in watersheds for drainage basins from water quality data & remotely-sensed leaf area index (LAI).

Web Development:

- Collaborated on biking web app using the Google JavaScript API and Postgresql's routing tools to output custom routes to users based on terrain and start/end locations.
- Developed, tested, trained staff, & implemented customized GIS services & geoprocessing tools through ArcGIS Server for mobile data entry & data-transfer through ArcGIS Online webmaps for the Tribe, City of Duluth, & MN Power.
- Added new HTML/CSS pages for reorganizing the Bad River Tribal Natural Resources webpage to host both secured & public Google, Esri JavaScript API, ArcGIS Online, & GeoMoose OpenLayers webmaps: www.badriver-nsn.gov/tribal-operations/natural-resources/gis-maps

SOFTWARE

Databases: Microsoft (SQL Server 2008/2013, SQL Server Express, & MS Access), Oracle 11g/12g, ArcSDE & Postgresql
GIS/GPS/GIS Servers: ArcGIS 9.3-10.5.x/Pro 2.x, ArcGIS Collector, Survey123, QGIS, ArcPad, Terrasync, & Pathfinder Office, ArcGIS Server, Portal
Programming: HTML, CSS, JavaScript, Python (Arcpy, OGR, GDAL, & modules), Java, C#
Code Versioning: TortoiseShell SVN, TortoiseHg, Github
Web Content Management Systems: Joomla, Druple, WordPress, Bluehost
Statistics/Remote Sensing: ENVI, IDRISI, R, SPSS, Systat, S-PLUS, OpenEV, Opticks
Presentation/Design: Adobe Illustrator & Photoshop 2015.5; & Microsoft 7 & 10 OS Office, Prezi, Slides.com, Draw.io/Visio
Project Management: Agile Methodology-Scrum framework