Shinichi Kobara, Ph.D. GISP.

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Summary

- **Geospatial Data Scientist** with over a decade of experience specializing in geospatial data analysis, model development, and web-based mapping application development
- Proficient in **SQL** (CTE, user-defined functions) and **Python** for algorithm development, feature engineering, ETL/EDA, CI/CD, API development, orchestration, testing, and implementation.
- Experience using data science tools and techniques for geospatial data product development and data visualization with **GCP BigQuery/GCS, AWS SageMaker/Lambda, and ArcGIS Enterprise/Portal**
- Applied research experience in Geospatial Analysis and hands-on experience in **machine learning**

Work Experience

Data Scientist Oct. 2021 – Present
Bayer Crop Science (Automation, Geospatial Modeling, and Experimental Trial Analytics team)

- Managed and maintained data warehouses on the Google Cloud Platform for multiple projects
- Developed a Python package to facilitate access to Bayer Crop Science Warehouse (GCP BigQuery) with Vault, enabling other teams to use BigQuery, API access, and execute queries in Python on AWS SageMaker/GCP VertexAI/Jupyter for ML/DL model development
- Collaborated with cross-functional teams, including data scientists, software engineers, data engineers, and business stakeholders, to deliver comprehensive analytic software solutions
- Ability to work independently, maintain a professional demeanor
- **Enhanced weather metrics processing performance by 10-100x** through the utilization of BigQuery

Associate Research Scientist – Product Developer and GIS Administrator Sept. 2016 – Sept. 2021
Texas A&M University/GCOOS, College Station, TX

- Led government-funded research projects in geospatial data analysis
- Applied deep learning for water property classification using satellite imagery
- Trained students and staff in geospatial analytical procedures
- Designed and developed full-stack web applications to visualize environmental data using ArcGIS Enterprise on AWS, ArcGIS Portal, ArcPy, MongoDB, FastAPI, NuxtJS, Docker, and cloud services
- Conducted data wrangling, analysis, and machine learning (ensemble methods) with Python tools.
- Established and managed the ESRI ArcGIS Enterprise server, built the GIS data catalog, and created multiple GIS datasets searchable on Google Datasets Search.

Education, Certification, and Completion of Relevant Courses

Texas A&M University, College Station, TX **Ph.D. in Geography (GIS & Remote Sensing)**

- Peer-Review Publications: https://www.researchgate.net/profile/Shinichi-Kobara/research
- Certified **Geographic Information System Professional (GISP)**
- Deep Learning Specialization (deeplearning.ai), Machine Learning (Coursera), Applied AI with Deep Learning (IBM), Spatial Data Science (ESRI), Spatial Statistics (TAMU)

Skills

- DevOps: Git, GitHub Action, Docker, Airflow, AWS Lambda/ECR, GCP 5+ years
- Programming languages: Python (Pandas, GeoPandas, Shapely, GDAL, Poetry, Anaconda, FastAPI) 10+ years, SQL (PostgreSQL/PostGIS /GCP BigQuery) 8+ years, and Julia 3+ years
- Data Science: Machine Learning with Python/SQL, AWS SageMaker, GCP BigQuery 3+ years
- GIS: ArcGIS Pro/Online/Enterprise Server. ArcGIS Enterprise Administration on AWS. WebMap Applications, GIS Data Catalog (ArcGIS Portal), BigQueryGIS/PostGIS. 10+ years.

Additional Skills Related to the Position

- Technical product management experience of 8+ years
- Collaborated with cross-functional teams, including data scientists, software engineers, data engineers, and business stakeholders for 10+ years
- Software development experience 8+ years
- The development and maintenance of products and services made available through the Products Portal.
- Maintain the computer hardware and software systems of the Products Portal. The Product Portal system is comprised of software applications running on several computers. Some computers, such as the ESRI ArcGIS Server, are devoted exclusively to Product Portal tasks. Responsible for maintaining the hardware and software systems of those systems over which he has exclusive use and control. It includes system administration tasks, system data and software backup, upgrades, and licensing.
    - Experience in ArcGIS Enterprise deployment and maintenance on on-premises and AWS.
    - Experience in Cloud Platforms such as Azure AD, AWS (SageMaker, ECR), GCP (BigQuery/VertexAI)
    - Developed and customized web mapping applications based on ESRI's JavaScript API
    - ArcGIS License Manager configuration and maintenance
    - Experience supporting GIS database services (RDBMS) on SQL Server and PostgreSQL
    - Data Processing/ETL using Python, SQL/NoSQL, and Julia
    - Proficient in Spatial SQL using BigQueryGIS and PostGIS
    - Experienced in Geospatial Python Programming and Spatial Analysis with Geopandas, BigQueryGIS
    - Strong Data Visualization skills and Web Application Development expertise for data integration using NuxtJS or Plotly/Streamlit

Featured Geospatial Projects & Analysis

GIS Server Administrator
Set up and maintained the organization's first ESRI ArcGIS Enterprise server and built the first GIS data catalog and multiple GIS datasets found through Google Datasets Search (*Dataset Search (google.com)*). *E.g., GIS Vector Data Catalog: https://gisdata.gcoos.org*.

Near real-time oceanic glider mission viewers
16th chapter of the book: ESRI Ocean Solutions, Earth Solutions
OCEAN SOLUTIONS, EARTH SOLUTIONS, SECOND EDITION BY DAWN J. WRIGHT | ESRI PRESS

Full-stack web application development: Data Portal
NOAA RESTORE Science Project
Fish Spawning Aggregations in the Gulf of Mexico (gcoos.org)
Capable of utilizing full-stack web map application development to visualize environmental data using ArcGIS Online/Enterprise, PostgreSQL/MongoDB, FastAPI, Docker, Traefik