Mazdak Ghasemi Tootkaboni

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Summary

Results-driven GIS professional with deep expertise in Esri ArcGIS Suite (Enterprise, Pro, Online, Field Maps, Survey123) and a proven record of managing enterprise GIS environments, integrating Vicmap and consultant data, and coordinating cross-department workflows to support planning, asset management, and compliance. Skilled in schema design, data governance, and automating ETL pipelines with FME, Python (pandas, NumPy, scikit-learn), and SQL/PostGIS to deliver accurate, timely spatial solutions. Experienced with Brightly Confirm asset data, Power BI dashboards, and Experience Builder web apps that connect decision-makers to actionable insights. Additional strengths include deploying production-grade solutions using Git/GitLab CI/CD, Docker, and Linux—bringing reproducibility, monitoring, and scalability to geospatial operations and enabling risk-aware insights that improve reliability and investment planning.

Experience

Greater Shepparton Council **June 2024 – Present**
GIS Officer (On-Site) *Shepparton, Victoria, Australia*

- Lead automation and optimisation of spatial data workflows using FME, reducing manual effort and ensuring timely integration of authoritative datasets (Vicmap) to support Council-wide operations.
- Design, develop, and manage complex GIS data layers in ArcGIS Pro and ArcGIS Enterprise, delivering high-quality spatial solutions for planning, asset management, and regulatory compliance.
- Publish and maintain geospatial layers on ArcGIS Server and Geocortex, overseeing rigorous testing, cataloguing, and workflow administration to guarantee data accuracy, system reliability, and end-user accessibility.
- Drive cross-departmental collaboration by providing advanced GIS data analysis, troubleshooting, and tailored spatial insights to support strategic decision-making across Council teams.
- Processing property updates and subdivision changes by preparing and submitting M1 and M2 forms via the Victorian Edit System (VES), maintaining compliance and data accuracy.
- Liaise with internal stakeholders and external data providers to resolve geospatial requests, enhance operational efficiency, and continuously improve system performance.

Centre for Spatial Data Infrastructures and Land Administration **DEC 2024 – Present**
Data Engineer (Remote) *Melbourne, Victoria*

- Architect and automate end-to-end geospatial data workflows using n8n, Python, SQL, and PostGIS, significantly reducing manual intervention and enhancing the scalability and reliability of spatial analytics.
- Integrate AI-driven analytics and machine learning into enterprise geospatial platforms, improving spatial data accuracy, reliability, and advanced analysis for diverse research and industry applications.
- Develop and govern geospatial metadata, data catalogs, and custom schemas to ensure data quality, interoperability, and reproducibility—enabling robust AI model training, cross-platform sharing, and research innovation.
- Design and deploy cloud-based geospatial solutions on Google Cloud Platform, managing secure, scalable application hosting (n8n, web services), and optimising network configurations for high-availability operations.
- Built full-stack mapping apps (Python back end + React front end) serving spatial features/analytics to research / industry users.
- Dockerised APIs, schedulers, and UIs with Compose; implemented versioned, repeatable releases via GitLab CI/CD and container registry.
- Built Python backends to expose features/analytics and React UIs for data exploration; designed JSON/GeoJSON contracts and API auth.
- Implemented GitLab CI/CD (build/test/deploy) and Dockerised services; deployed on Linux with isolated environments and repeatable releases.
- Supported high-profile projects (e.g., "Venice Biennale: Song of the Cricket", UEDLAB, CSDILA, ARUP) by processing and harmonising satellite and field data (GEE, Python, ArcGIS Online), applying unsupervised/supervised classification (K-Means, Random Forest), and generating geospatial outputs (change detection, land cover, flood/sea-level overlays) for ecosystem analysis and reporting.
- Partnered with cross-disciplinary development teams (including web developers using React, JavaScript) to design and deploy platform enhancements, incorporating best practices in enterprise data management and ensuring seamless integration with existing systems.
- Deployed IoT integration using MQTT protocols, developing dynamic dashboards for real-time geospatial data monitoring, enhancing operational responsiveness.

- Ensured rigorous data integrity through geometry correction, standardisation, and consistent styling of complex geospatial datasets.
- Managed secrets and configs via masked CI vars and per-host .env files; enforced least-privilege access for service accounts.

Mansfield Shire Council **Sep 2024 – June 2025**
GIS Officer (Hybrid) *Mansfield, Victoria, Australia*

- Design and automate ETL (extract-transform-load) processes using Python, SQL, and PostGIS, streamlining data validation and significantly reducing manual workload.
- Consolidate and reconcile spatial datasets from multiple sources into the council's centralised GIS database, ensuring data integrity, attribution, and compliance with QA standards.
- Conduct quality assessment, metadata management, and routine updates for new and existing property and asset data within the GIS system.
- Utilised POZI, QGIS, and AutoCAD to visualise spatial developments, enhancing decision-making accuracy for internal stakeholders.
- Improved operational efficiency by streamlining spatial data integration with POZI Connect, SynergySoft, MapInfo Pro, and MBS Premium.
- Engage with planning, rates, and asset management teams to interpret user requirements, document procedures, and communicate data updates.
- Manage asset data using Assetic to maintain efficient and accurate spatial representation across council assets.

Centre for Spatial Data Infrastructures and Land Administration **DEC 2023 – NOV 2024**
Research Assistant *Melbourne, Victoria (Remote)*

- Conducted research on AI-Driven Generative Urban Design, significantly enhancing urban design efficiency through advanced spatial analysis and modelling techniques.
- Assisted in advancing spatial ontologies and improving the efficiency of 3D cadastre processing, contributing to more accurate and reliable geospatial data management.
- Managed integration of geospatial data into GeoServer for visualisation within Digital Twin frameworks, improving accessibility and facilitating informed decision-making.
- Contributed to various projects by gathering and integrating diverse datasets, enhancing project database accuracy and reliability through geometry correction, coordinate system adjustments, and appropriate data styling to ensure consistency.

Curtin University **May 2024 – September 2024**
Research Assistant (GIS Analyst) (Remote) *Perth, WA, Australia*

- Enhanced the Envision Tomorrow Australia (ET-Oz) sustainable planning model through advanced geospatial analytics, predictive modelling, and scenario planning (leveraging ArcGIS Pro and ArcGIS Online).
- Customised spatial datasets specifically for Australian urban landscapes, improving model accuracy and facilitating strategic urban regeneration initiatives aimed at net-zero emissions targets.
- Conducted comprehensive geospatial analyses and harmonised diverse data sets for accurate model representations.
- Fostered cross-sector collaboration to ensure data accuracy, harmonisation, and actionable insights from complex spatial datasets.

Parks Victoria **MAY 2022 – MAY 2024**
GIS Analyst (Hybrid) *Melbourne, Victoria, Australia*

- Led critical geospatial initiatives, including spatial routing, impact mapping, and resource allocation for emergency response and recovery from flood and fire disasters.
- Developed integrated field data collection solutions (ArcGIS Online , ArcGIS Enterprise, Collector app, Field Maps, Survey123), significantly streamlining logistics and improving real-time decision-making for disaster recovery teams.
- Managed complex spatial data workflows using FME, ArcGIS Pro and ArcGIS Enterprise, maintaining accurate GIS databases critical for rapid emergency response and logistical planning.
- Generated targeted analytical reports and visual dashboards, improving stakeholder communication and operational effectiveness.
- Processed and exported GPS data for detailed mapping and analysis, supporting the recovery team in identifying and evaluating affected regions.
- Supported and provided training in the use of ESRI collector apps, including ArcGIS Field Maps and Survey123.
- Performed targeted spatial analysis and mapping across various regions, aiding in the recovery and restoration of flood- and fire-affected areas.

- Led the creation of a GIS database focused on disaster recovery, ensuring data integrity and the inclusion of real-time updates from the field.
- Updated and validated spatial information within the corporate database, incorporating new spatial data collected from recovery sites to ensure accuracy and reliability.
- Managed user access, ensuring the recovery team's access to essential mapping and analysis tools.

HUMAYA Automation **MARCH 2022 – MAY 2022**
Spatial Data Analyst (Remote) *Melbourne, Victoria, Australia*

- Designed robust spatial databases (ESRI geodatabases, SQL Server) to enhance data-driven decisions regarding infrastructure placement, risk assessment, and operational efficiency.
- Conducted spatial analysis to identify strategic locations for new infrastructure and risk zones (landslide potential areas), significantly improving proactive mitigation strategies.
- Integrated geospatial datasets with IoT solutions, enhancing smart metering, precision agriculture, and logistical operations (monitoring, tracking, and analysis).
- Supported field data collection initiatives, maintaining comprehensive GIS datasets for improved corporate spatial intelligence and accuracy.
- Maintained GIS/3D/GPS data sets for the corporate database.
- Liaised with staff to understand data capture requirements and recommended appropriate hardware.
- Drew and edited geological maps, geological surveys, and exploration.
- Provided support in AutoCAD drafting of geological maps, enhancing the visual representation of geological data for analysis and presentation.

Avale Enterprises **MAY 2021 – FEB 2022**
GIS Analyst (Remote) *Melbourne, Victoria, Australia*

- Enhanced spatial dataset accuracy (routing optimisation, geometry correction) using advanced GIS tools (ArcGIS Pro, MapInfo), improving reliability across multiple projects.
- Spearheaded high-quality cartographic production and spatial visualisation (optimised symbology, Portal for ArcGIS), improving user experience, clarity, and informed decision-making.
- Directed comprehensive restructuring of geospatial databases and administrative processes (ArcGIS Online), significantly improving organisational accessibility, data compliance, and operational standards.
- Validated spatial data quality and optimised symbology for enhanced visualisation.

SSS Steel Structures & Construction **NOV 2018 – APR 2021**
Site Supervisor (Part-time, On-site) *Guilan Province, Iran*

- Led construction personnel, effectively delegating tasks, managing schedules, and ensuring timely completion of projects within scope and budget.
- Performed regular site inspections, proactively ensuring compliance with health, safety, and quality standards, minimising project risks and ensuring smooth operational workflows.
- Managed resource allocation, ordered supplies, coordinated equipment maintenance, and streamlined logistical processes, significantly improving operational efficiency.
- Delivered hands-on training to new construction staff, building a reliable and skilled team aligned with organisational standards and expectations.

SSS Steel Structures & Construction **OCT 2016 – SEP 2018**
Construction Site Manager *Guilan Province, Iran*

Training: OCT 2016 – MAY 2017
Full-Time: JUNE 2017 – SEP 2018

- Served as the primary technical advisor for construction sites, collaborating directly with subcontractors, consultants, and site personnel, ensuring clarity in communication and alignment with contractual obligations.
- Managed and monitored contract documentation, ensuring strict compliance with design specifications, regulatory requirements, and quality assurance processes.
- Coordinated closely with multidisciplinary stakeholders, effectively resolving technical and logistical challenges to maintain project timelines and budgets.
- Oversaw material procurement and selection processes, meticulously adhering to local construction standards and regulations, significantly enhancing project compliance and quality control.

Education

University of Melbourne **Feb 2022 – DEC 2024**
Master's in Spatial Engineering *Melbourne, Victoria, Australia*

– Capstone Project: Digital Twin with IoT for real-time monitoring and visualisation for indoor & Outdoor environments.

Azad University Central Tehran Branch **Sep 2017 – Jul 2020**
Master's in Petroleum Engineering (Oil and Gas Exploration) *Tehran, Iran*

– Thesis: 3D Simulation of a Giant Oilfield in Calcareous Formations and Study of Calculated Parameters (Asmari Formation, Maroon Oilfield).

Azad University Bandar – E – Anzali Branch **Sep 2013 – May 2017**
Bachelor of Science in Civil Engineering *Guilan, Iran*

Skills

- Geospatial Data Science & Analytics: ArcGIS Pro/Online, QGIS, PostGIS, FME
- Machine Learning & AI: Python, R (RStudio, Shiny), scikit-learn, Random Forest, K-Means
- Data Engineering: SQL (PostgreSQL, Oracle), ETL Automation, Metadata Management
- Advanced Visualisation: Power BI, Tableau, R Shiny, Excel, Dashboards
- Full-stack APIs: RESTful Python back ends; React components/state; map rendering (Leaflet / Maps APIs)
- Digital Twin & IoT Integration: Real-time Sensor Data, MQTT, Digital Twin Platforms
- DevOps CI/CD: GitLab CI/CD, Docker, Linux services; repeatable builds, logs/diagnostics; secure app hosting on GCP
- ArcGIS Enterprise/Online Solution Design & Deployment (Cloud/On-Prem)
- Enterprise Geodatabase Modelling & Versioning (2D/3D)
- Remote Sensing & Photogrammetry: Satellite & Field Data, Change Detection
- Web Development: HTML, CSS, JavaScript, React, Leaflet
- Workflow Automation: n8n, FME, Python Scripting
- Strategic Planning & Engagement
- Data Governance, Quality Assurance, Documentation

Certificates

- Foundation of Project Management (Google)
- Project Initiation: Starting a Successful Project (Google)
- Project Planning: Putting It All Together (Google)
- Transform AEC Projects with GIS and BIM (Esri)
- GIS for Climate Action (Esri)
- ITIL® Foundation Certificate in IT Service Management
- Prompt Design in Vertex AI
- FME Form Basic
- Python Scripting for Geoprocessing Workflows (Esri)
- Data Science Workflows Using ArcGIS Notebooks (Esri)
- Complete Guide For Leaflet JS
- Creating Smart Maps With Python and Leaflet
- Python for Geospatial (Esri)
- Creating Underground Scene in ArcGIS Online (Esri)
- Using Arcade Expressions in ArcGIS Dashboards (Esri)
- Managing Data Quality Using ArcGIS Data Reviewer (Esri)
- Python Scripting: Modifying Layer Properties (Esri)
- Python Scripting: Modifying Page Layouts (Esri)
- Python Scripting: Repairing Data Sources (Esri)
- Cartography (Esri)
- Going Places with Spatial Analysis (Esri)
- Monitoring an ArcGIS Online Organization (Esri)
- Archiving Data in a Multiuser Geodatabase (Esri)
- Automating Workflows Using ArcGIS Pro Tasks (Esri)
- ArcGIS Survey123 Basics (Esri)
- Building Geoprocessing Models Using ArcGIS Pro (Esri)
- Visualizing Data Using ArcGIS API for Python (Esri)
- Performing Analysis Using ArcGIS API for Python (Esri)
- Basics of JavaScript Web Apps
- Administering Content Using ArcGIS API for Python (Esri)
- Accessing Data in a Portal Using ArcGIS API for Python (Esri)
- The Complete SQL Bootcamp
- Getting Started with the Geodatabase
- Introduction to Spatial Databases with PostGIS and QGIS
- Complete Enterprise GIS (using opensource GIS software and web mapping)
- ArcGIS Indoors: Deploying Indoor Viewer and Mobile Apps (Esri)
- ArcGIS Pro Basics (Esri)
- Displaying Raster Data in ArcGIS (Esri)
- Distance Analysis Using ArcGIS Pro (Esri)

- Getting Started with ArcGIS Pro (Esri)
- Processing Raster Data Using ArcGIS Pro (Esri)
- Basics of Geographic Coordinate Systems
- Creating and Sharing GIS Content Using ArcGIS Online (Esri)
- GIS Basics
- Getting Started with Data Management
- Getting Started with Mapping and Visualization (Esri)
- Getting Started with Spatial Analysis (Esri)
- Introduction to ArcGIS API for Python (Esri)
- Querying Data Using ArcGIS Pro (Esri)
- Suitability Modeling: Creating a Weighted Suitability Model (Esri)
- Suitability Modeling: Introduction (Esri)
- Terrain Analysis Using ArcGIS Pro (Esri)
- Understanding Spatial Relationships (Esri)