

Ian C. Reese

Geospatial Developer / Engineer

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PROFILE

I'm an experienced geospatial developer / engineer **specializing in cloud based scaled processing, raster and point cloud data analysis, and web mapping**. I'm proficient in Python and implementing open source geospatial technologies. I'm a curious self starter with a solid work ethic and the ability to deliver projects on time and on budget. I'm a dual citizen of the United States and New Zealand, and I have the right to work in Australia.

LANGUAGES AND TOOLS

Python, Bash, Docker, Make, AWS EC2 and S3, Terraform, GDAL, PDAL, QGIS, PostGIS/PostgreSQL, QPy, GeoPandas, Fiona, PyProj, R, GRASS GIS, SAGA GIS, Adobe CS, ArcGIS, CartoCSS, Linux, Mapnik, MapProxy, HTML/JS/CSS, Mapbox GL JS, Openlayers, Leaflet, PyTorch

EDUCATION

Landscape Architecture, MSLA
The Pennsylvania State University 2011

Mechanical Engineering, AS
The Pennsylvania State University 2008

Institutional Mgmt, BS
The Pennsylvania State University 2000

PUBLICLY AVAILABLE PROJECTS

USGS Point Cloud Surface Viewer
<https://xycarto.github.io/xyc-wesm-viewer/>

SWA Flood Mapping
<https://swa-impactmap.dragonfly.co.nz/>

Gridding NZ Aerial Imagery
<https://github.com/xycarto/aerial-index-nz>

PROFESSIONAL EXPERIENCE

Director

XYCarto Ltd.

Jan 2020 - Present

- Point cloud transformation to hydro-corrected surfaces
- Scaled SIMWE, SWATPlus flood modeling for rapid deployment
- Nationwide identification for riparian and shelterbelt for satellite
- Scaled scripting/automation for Terraform in AWS launching high performance EC2 for process and analysis
- National hydro-correction process rebuilding LINZ 8m DEM merged with 1m LiDAR
- Scaled transformation of elevation surfaces to COG for web access.
- Front and backend web service development for OpenLayers leveraging static delivery from S3 of raster and vector tiles

Senior Geospatial Developer

Dragonfly Data Science

Jan 2021 - Oct 2023

- Development of data pipelines for 400k+ LiDAR and satellite data. Translation to DSM, DEM, CHM, tree points, tree approximate objects, and elevation surfaces.
- Scaled pipeline engineering using S3, EC2, Kubernetes, and Terraform
- Web and tile server development using Openlayers, Maplibre with static service from AWS S3.
- Custom tiling tool development leveraging QGIS, PyQGIS for raster tiling

Geospatial Developer and Visualization Specialist - Contract

CreativeHQ - GovTech Lightning Lab

Oct 2020 - Dec 2020

- Proof of concept for online point cloud discovery tool
- Point cloud processing for surfaces, COG, tiling, and visualization

Senior Spatial (GIS) Analyst

Land Information New Zealand (LINZ)

Nov 2013 - Dec 2019

- Geospatial data analysis and interpolation via open source tooling
- XYZ/TMS/WMTS web development
- Cartographic visualization using QGIS, HTML, JS, CSS, CartoCSS and Adobe CS tools
- Development and cartography for proof of concept base mapping system: <https://tiles.maps.linz.io/>
- Online Antarctic base map for LINZ Gazetteer website
- In house training for scripting, automation, and GIS best practices

3D Specialist GIS - Contract

Geographx

July 2013 - Nov 2013

- 3D visualization using Skyline Globe, Global Mapper, Natural Earth, and Adobe CS. Graphic arts and animation for publications, web, and research.

GIS Consultant/Analyst

The College of William and Mary / AidData

Feb 2012 - July 2013

- LiDAR data management, data visualization, CAD translation