

Carlos Grace

GIS Graduate · Spatial Analysis & Mapping

Clonmel, Ireland | +353 83 481 7736 | carlosgrace44@gmail.com

linkedin.com/in/carlosgrace | Portfolio: arcg.is/11X1K91

GIS Professional with hands-on experience across a council internship, a 35-year land cover change study and an independent network analysis project.

TECHNICAL SKILLS

- **QGIS and ArcGIS Pro:** spatial analysis, cartography and map layout
- **R:** sf, terra, spdep, gstat, dplyr, ggplot2: reproducible spatial analysis workflows
- **Spatial statistics:** kriging interpolation, LISA spatial autocorrelation, species distribution modelling
- **Data management:** digitising, georeferencing, attribute cleaning and validation, CRS handling (ITM EPSG:2157, WGS84)
- **Python:** beginner, currently learning for GIS automation
- **ArcGIS Online and StoryMaps:** web maps and public-facing story maps
- **Raster analysis:** CORINE land cover, reclassification, raster-to-vector conversion, DEM terrain analysis
- **Network analysis:** road-network distance and service coverage
- **Web mapping:** Leaflet

GIS PROJECTS

Urban Sprawl and Path Dependency in Galway City, 1990–2025 (78%)

QGIS · R

Dissertation, University of Galway

- **QGIS** used to clip and vectorise CORINE land cover rasters for five survey years within a 9 km study buffer, to build a consistent record of artificial surfaces in ITM.
- **R** workflows written to measure land consumption, density across nine 1 km rings, fragmentation and urban centroid shift, quantifying an 88.1% expansion in the urban footprint.
- Pre-1990 OSi mapping tested for comparability and excluded with documented reasons, to keep the growth figures defensible as a lower-bound estimate.
- Four Galway City Development Plans coded (45 entries) against the spatial results, to link measured growth to planning decisions.
- **Leaflet interactive map** built in R, to share findings beyond a static report.

EV Charger Access, Galway City

2026

Independent project · QGIS

- **QGIS** network analysis used to calculate road distance from every Census Small Area to its nearest public EV charger, to identify coverage gaps.
- Gap maps produced to show where new chargers would reach the most residents, supporting transport infrastructure planning.

Advanced GIS Coursework

R · QGIS

University of Galway

- **Kriging** (gstat) used to interpolate rainfall surfaces from weather station data, mapped in QGIS for regional climate analysis.
- **DEM hillshade** and an **ensemble model** used to map landslide susceptibility, to identify high-risk terrain.
- **MaxEnt** and **Random Forest ensembles** used to model vulnerable marine ecosystem distributions, with Prioritizr ranking candidate reserve sites.
- **LISA** used to test deprivation data for spatial clustering; historical French nautical chart georeferenced to support coral restoration work.

GIS EXPERIENCE

GIS & Heritage Research Intern

Spring – Summer 2025

Galway County Council · Galway, Ireland

- ArcGIS StoryMaps built and published with community heritage groups across Co. Galway, to make local history accessible to the public.
- ArcGIS Online used to collect, organise and map heritage material, from data gathering through to public release.
- Historical census records digitised and published on the Council website, for public use.
- Finished project presented in the Council chamber to elected members including the Cathaoirleach, explaining the spatial work to a non-technical audience.

WORK EXPERIENCE

Head Beach Lifeguard

Summers 2024 – 2026

Town of Nantucket (Nantucket Police Department) · Nantucket, MA, USA

- Led a team of five or more lifeguards on busy Atlantic beaches, running shift rotas and daily safety compliance checks.
- Responded first to water rescues and serious injuries, coordinating with police and emergency services.

Labourer & Materials Manager

Summers 2016 – 2022

Paul Grace Painting & Decorating · Clonmel, Co. Tipperary

- Tracked materials stock across 10+ commercial projects, including Adare Manor, Cashel Palace and Clonmel Hospital, so crews had supplies on site without over-ordering.

EDUCATION

BSc Social Science & Sustainability (Geography)

2022 – 2026

University of Galway · Galway, Ireland

First class Hons Geography degree with GIS as a core strand: Introduction to GIS, Advanced GIS, Introduction to Spatial Planning, Coastal Dynamics, and Weather and Climate. Final-year dissertation: *Path Dependency and Sustainable Urban Transition: A Mixed-Methods Analysis of Galway City's Urban Sprawl, 1990–2025*.

Leaving Certificate

2016 – 2022

Kilkenny College · Kilkenny, Ireland

CERTIFICATIONS

Emergency First Responder · CPR, EMR and AED · Red Cross Lifeguard Certificate · ECDL · Full driving licence