

JARED PEMBERTON

GEOSPATIAL ENGINEER
GIS DEVELOPER
3D VISUALIZATION

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Lawrence, KS · Kansas City area · Remote

SUMMARY

Geospatial pipeline engineer from a CGI background with 20 years of experience in 3D graphics, simulation, games, and infrastructure visualization. Built the Python + Houdini PDG pipeline that turned GIS and LiDAR sources into ~42,000 real-world golf courses (~750,000 playable holes) at Garmin; full-catalog generation went from roughly 90 days to under 3. LiDAR/DSM/DTM ingest and alignment (PDAL, GDAL, Global Mapper, QGIS), procedural terrain and 3D asset generation from geodata, automated validation, and full-stack web tooling (React, TypeScript, FastAPI).

CORE SKILLS	GEOSPATIAL	PDAL, GDAL, Global Mapper, QGIS, LiDAR/DSM/DTM ingest and alignment, USGS 3DEP, raster/vector processing
	LANGUAGES	Python, C#, JavaScript/TypeScript, VEX, MEL, MaxScript
	PIPELINE & AUTOMATION	data validation, QA automation, logging, Deadline render farm, Perforce, Git
	WEB & BACKEND	FastAPI, React, TypeScript, Supabase (Postgres), Stripe, Cloudflare; multi-agent AI dev workflows
	3D & PROCEDURAL	Houdini (PDG/TOPs, HDAs), Maya, 3ds Max, USD, procedural terrain and asset generation
	REAL-TIME & VISUALIZATION	Unreal Engine, Unity, VR/AR, large-scale interactive environments

- EXPERIENCE
- Co-Founder · Acrediant Solutions, Lawrence, KS

Aug 2025 – Present

 - Healthcare SaaS for insurance panel credentialing. Designed UI in Figma; built full stack (React 19, TypeScript, Supabase, Stripe, Cloudflare) as sole developer, directing a multi-agent AI dev workflow.
- Product Architect + Senior Technical Artist · Garmin (Garmin Labs), Olathe, KS

Feb 2018 – Jan 2026

 - Built the Python + Houdini PDG pipeline that turned GIS and LiDAR sources into ~42,000 real-world golf courses (~750,000 playable holes) with a core team of fewer than five, backed by automated validation and QA gates.
 - Built LiDAR/DSM/DTM data-prep and alignment tooling (PDAL/GDAL, Global Mapper) feeding procedural terrain generation; designed Enhanced Courses, a PDG pipeline generating courses directly from GIS and LiDAR data.
 - Worked with a small team to advance the pipeline until full-catalog generation went from roughly 90 days to under 3 days.
 - Authored tools for terrain generation, geodata validation, and asset ingestion; implemented logging, error handling, and automated QA checks; designed Unity-based asset validation with automated reporting.
 - Pitched and prototyped the Home Tee Hero IP (Approach R10/R50), Garmin's first internally developed recurring-revenue product, in Garmin's internal innovation incubator; built the pitch demo in Unreal Engine; collaborated with cartography, engineering, and art teams.
 - After v1 shipped, worked with supervisor and HR to define Garmin's first Technical Artist job title; mentored artists and engineers and maintained pipeline documentation and tools.
- Founder · Mapbase.ai, Lawrence, KS

Jan 2024 – Present

 - B2B/B2C SaaS in development: on-demand terrain from USGS 3DEP LiDAR. Built the working pipeline end to end: web map UI → FastAPI backend → PDAL pipeline producing DSM/DTM rasters, with Houdini procedural generation downstream. Python, PDAL, GDAL, Unreal, Unity, React.
- Senior 3D Visualization Specialist · HNTB, Kansas City, MO

Jan 2012 – Feb 2018

 - Integrated GIS and architectural datasets into large-scale interactive 3D environments for infrastructure proposals; automated rendering and compositing (Deadline, MaxScript, JSX); implemented VR/AR visualization in Unreal, Unity, and CryEngine.
- Character Artist · Atomic Games / Destineer Studios, Raleigh, NC

Feb 2007 – Feb 2011

 - Character assets and textures for Six Days in Fallujah, Breach, and classified serious-game titles for US intelligence clients on a proprietary engine; partnered with the tools team to develop a proprietary node-based HLSL shader editor for the engine; built MaxScript tools to automate character production and optimized skinning/export pipelines.
- Senior 3D Artist · Camber Corporation, Fayetteville, NC

Sep 2005 – Feb 2007

 - Real-time simulation assets for government training; Maya/MEL automation; promoted within a year, led a small art team.

SHIPPED

Home Tee Hero (Approach R50)

Home Tee Hero (Approach R10)

Garmin Lily

Garmin Catalyst

Six Days in Fallujah

Breach

classified simulation products

EDUCATION

Diploma, 3D Animation/VFX (Modeling) — Vancouver Film School
B.S. Interactive Digital Media — Northwest Missouri State University