

Trần Ngọc Bình

3D Data Engineer

Point cloud & drone data → web 3D

I work across three things that usually take three people: I register and QC terrestrial laser scans, I process drone survey and multispectral data into maps an agronomist or engineer can act on, and I build the 3D web that lets your client walk through the result in a browser tab. Twelve years in UAV field operations before I wrote the software side, so I read a dataset the way the person who flew it does. Every deliverable ships with a QC report whose numbers come from measurement artifacts, not from me typing them in.

What I do

01 Multi-station point cloud registration + QC reporting

39**2.2–3.4 mm****96.9–98.6%**

stations registered (Trimble X7) inter-station agreement wall points within 5 mm

4–5×

better than LOD400 documentation tolerance

02 Web 3D & web maps — turning captured data into something a client can open

3**6-room****2,683**

production sites live 3D exhibition, browser-native commits across 36 repositories

Next 16 · React 19 · R3F

current stack, not legacy

03 Drone survey processing — orthomosaic, DSM/DTM, vegetation indices

1**5**

multispectral survey flight, processed end-to-end indices (NDVI · GNDVI · OSAVI · NDRE · LCI)

7**ahead of estimate**

management zones · 19.67 ha delivery vs. planned hours

04 Point cloud cleaning — conservative, reversible, reviewed

0.021%**458.9 M**

false-positive rate, measured on a controlled subset points examined in one pass

not yet quantified

recall — stated, not estimated

05 DJI Mobile SDK v5 application development

MSDK 5.18**Kotlin 2.1**

Mavic 3M · RC Pro Enterprise compileSdk 35

How I verify

Numbers come from artifacts,
not from me

Explicit accept/reject
thresholds

Known-failure tripwires are
printed in the report

Limits are stated, not buried

Selected work

Heritage temple — 39-station laser scan registration

Hưng Miếu, Imperial City of Huế · Trimble X7 · 264.9 M points

OUTCOME

2.2–3.4 mm

inter-station agreement, structural elements

0.70–0.83 mm

median per-point wall residual

96.9–98.6%

wall points within 5 mm

39/39

stations registered, network fully connected

Stated limits — Accuracy figures are inter-station agreement and per-element residuals computed from the scan data itself. No independent survey control was in scope, so these describe internal consistency of the registration, not absolute position in a national coordinate system.

Browser-native 3D museum — my own build, in progress

Hue4U Digital Museum · React 19 · React Three Fiber · Three.js · Hono + tRPC + Drizzle · Postgres 16 · pnpm monorepo

OUTCOME

6

browser-native per-room

exhibition rooms off a great hall

no install, no plugin

authored camera + post-processing

Stated limits — This is my own product, still in development, not a delivered client engagement — it runs locally and is not yet public, which is why there is no link. The artifact models and exhibition copy originate with the site's heritage conservation authority and its digital partner, whose published exhibition I used as a technical reference; the collection is theirs, not mine. What is mine, and what these screenshots show, is the web and 3D engineering: the hall, the room loading, the camera work and the API behind them.

Tools

POINT CLOUD & PDAL, Open3D, CloudCompare, small_gicp, TEASER++, pye57, COLMAP, OpenMVS,
PHOTOGRAMMETRY IfcOpenShell

GEOSPATIAL QGIS, GDAL, rasterio, PROJ, GeoTIFF / COG, PostGIS

WEB & 3D TypeScript, Next.js 16, React 19, Three.js, React Three Fiber, Tailwind 4, Drizzle, Playwright

MOBILE & Kotlin, DJI Mobile SDK v5, Android, RTK / GNSS workflows
FIELD

LANGUAGES Python, TypeScript, Kotlin, SQL

Working together

WHAT I DON'T OFFER

Scan-to-BIM / point cloud to Revit modelling – I do not offer this yet, and I would rather say so than learn on your project.

On-site capture outside Vietnam – I process data; the flying or scanning is yours or a local provider's.

Certified survey deliverables requiring ASPRS or licensed-surveyor sign-off.

Get in touch

Send the dataset details – format, station or image count, and what you need out – and I'll come back with a fixed price and a delivery date.

binhuav@gmail.com binhuav.com github.com/binhuav