MAXIMILIANO GOMEZ MONTERO

Applied AI Engineer | Industrial & Manufacturing

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Canadian Permanent Resident (no sponsorship required) • Toronto/GTA • Available January 2027

SUMMARY

Manufacturing engineer who builds AI-assisted software for industrial engineering workflows. Designed and shipped two production desktop apps, including a workflow tool used daily to run a USD 21M project pipeline (~340 hours saved a year). M.S. in Manufacturing Engineering (GPA 4.0) and co-author of a peer-reviewed ML paper in Neural Computing and Applications (Springer).

AI & SOFTWARE PROJECTS

ProjectTracker – Personal tool built for my own project-engineering work *Jun 2026 – Present*

- Designed and shipped a desktop app (Electron/Node.js) integrating Outlook, Acumatica ERP and SharePoint; used daily to track 54 opportunities (USD 21M quoted; USD 4M in execution).
- Automated email-to-project matching and milestone detection across ~145 emails/week with rule-based scoring and milestone detectors (94% agreement with past manual decisions); an LLM only writes one-line summaries; every ERP write is human-approved.
- Added automated drawing QA (44-criteria layout check) and drawing-vs-quote cross-checks that caught real errors before release (order-number typo, 350 vs 500 lb hook load, ceiling-height mismatch).
- Evaluated on real history: accuracy 63% → 95% across versions, 8,771-email detector benchmark, 1/141 approved proposals misfiled; ~7.3 h/week saved. Rules core + LLM benchmark: github.com/maxgomezmontero/projecttracker-core.

Restaurant Accounting & Analytics System – Independent project, Peoria, IL *Aug 2026 – Present*

- Built and shipped (in use since Oct 2026) a Windows desktop app (Electron, React, TypeScript, SQLite, cloud sync): imports POS ticket PDFs and DoorDash/UberEats/GrubHub CSVs, OCRs receipts, runs payroll, cash reconciliation and monthly close, plus menu-margin analytics.

Approval Gate: AI-safety evaluations – Open source, Python + Inspect (UK AISI) *Nov 2026*

- Agents kept an ERP approval gate (Inspect eval; 0/486 bypasses with the rule written). Follow-up applied inspection methods (SDT, Gage R&R) to LLM reviewers in 1,880 runs: near-zero misses with evidence; without it, approvals hinged on model and UI.

PUBLICATIONS

Chen, J., **Gomez Montero, M. A.**, & Yu, S. (2026). Development of an ANN-based online surface roughness prediction (ANN-OSRP) system in wire electrical discharge machining processes. *Neural Computing and Applications*, 38(4), 87. Springer.

- Neural network predicting wire-EDM surface roughness in real time from machine-controller signals; ~95.8% average accuracy.

Under review: vibration-based prediction of surface roughness and perpendicularity in CNC milling (Python ML models), *IJIDeM*.

EXPERIENCE

Project Engineer – Dove Equipment / ICAFe, East Peoria, IL *Jun 2025 – Present*

Engineering Intern, Jan – May 2025

- Lead technical development of industrial finishing systems (paint/powder booths, ovens, AMUs, conveyors) for EV, heavy-equipment and building-products manufacturers: process selection, sizing, layouts and vendor coordination.
- Manage ~20–25 concurrent opportunities; 10 of 23 decided projects won (USD 4.85M quoted), 4 in execution (USD 4.0M).
- Managed ~6 on-site installations and start-ups (installers, schedule, punch list), incl. a multi-booth EV paint line.
- Wrote SOPs and standardized ERP project data with schedule-overrun alerts.

Graduate Teaching Assistant – Bradley University, Peoria, IL *Jan 2024 – May 2025*

- Taught machining, injection molding and Excel/Power BI labs; supported curriculum design and research.

Logistics Analyst – ABC Distributions, Tucumán, Argentina *Apr 2023 – Dec 2023*

- Raised operational efficiency 15% through time studies; digital tools lifted sales productivity 10% per worker.

EDUCATION

M.S. Manufacturing Engineering – Bradley University, Peoria, IL | GPA 4.0 *May 2025*

- Graduate Commencement Speaker (Spring 2025); Marjorie Reynolds Award for academic excellence.

Industrial Engineering Degree – National University of Tucumán, Argentina *Sep 2023*

- Final project (Industry 4.0): led a WMS/TMS digital transformation of order-to-delivery logistics workflows.

SKILLS

- **AI & Software:** Python, SQL, LLM integration, AI-assisted development (Claude Code), Electron, React/TypeScript, SQLite, Git, Power BI, Excel
- **ML & Data:** Neural networks (ANN), regression, feature selection, Taguchi DOE, model validation; human-in-the-loop automation design
- **Engineering:** Finishing systems, AutoCAD, FactoryCAD, Creo, PLCs, CNC, lean, layout planning, commissioning
- **Languages:** Spanish (native), English (CELPIP CLB 10), French (TEF Canada NCLC 7+)

HONORS & ACTIVITIES

- Assistant coach, Central Illinois United (girls U14–U17) and Illinois Central College women's soccer; US Soccer grassroots license.
- 1st Place, Latin American Innovation Rally 2021 (provincial level): tech-based solution to address domestic violence.