

SERGIO ARATH GUZMAN

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EDUCATION

Bachelor of Science in Industrial Engineering — GPA: 3.77 *Anticipated: MAY 2027*
Ingram School of Engineering — ABET Accredited Program · Texas State University, San Marcos, TX

Associate of Applied Science in Architectural Design — GPA: 3.51, Honors *AUG 2021*
Texas State Technical College, Waco, TX

CERTIFICATIONS

IISE Six Sigma Green Belt — Institute of Industrial & Systems Engineers (APR 2026)

TECHNICAL SKILLS

- **Languages & Tools:** Python, JavaScript, MATLAB, C, Assembly, Minitab, SolidWorks, AutoCAD, AutoCAD C3D, Revit, Microsoft Office Suite, Git
- **Web Development & AI Tooling:** Vite, Lit, FastAPI, Tiptap, Plotly.js, Docker, Ollama, WebSocket, Vercel; multi-agent LLM orchestration, real-time dashboards
- **IE Methods:** DMAIC, KPIs, process mapping, SOPs, QA/QC, continuous improvement, systems standardization & troubleshooting
- **Domain Knowledge:** Water/wastewater design, SCADA, public infrastructure permitting, TCEQ codes, restraint joint calculations, construction administration (RFI, change orders, submittal review)
- **Project & People:** Cross-functional team collaboration, client & agency liaison, onboarding & training, public speaking; fluent in English and Spanish

RESEARCH EXPERIENCE

Undergraduate Researcher — Digital Twin Development & AI Automation in Makerspace *JAN 2026 – Present*
College of Engineering, Texas State University

- Awarded competitive undergraduate research grant to investigate AI-driven automation in makerspace workflows.
- Designing HAAS CNC digital twin with acoustic-emission TinyML pipeline on STM32 + ESP32 + Raspberry Pi hardware; integrating real-time sensing, edge inference, and dashboard reporting.
- Translating technical insights into practical automation that reduces operational friction, improves accessibility, and supports sustainable system management in shared engineering environments.

PROFESSIONAL EXPERIENCE

Public Infrastructure Designer: Water/Wastewater — Westwood Professional Services, Austin, TX *NOV 2021 – JAN 2026*

- Lead design and drafting of water and wastewater systems on 10+ municipal projects (pump stations, utility extensions, roadway expansions) from initial proposal through Issued-for-Construction and record submission.
- Founded local CAD Committee and led adoption of National CAD Standard layer conventions across the office, improving cross-office deliverable consistency and reducing rework.
- Construction administration: RFI and change-order processing, submittal review, preliminary exhibits, water/wastewater alignment design, restraint joint calculations; verify TCEQ and city-ordinance compliance throughout project lifecycle.
- Serve as primary point of contact with review agencies, clients, and internal teams; onboard, train, and mentor junior designers and engineers; perform QA/QC reviews across team deliverables.

Notable projects: *Grant Road PUD Headworks (Houston) · Justin GST + High Service Pump Station · Link Logistics 123 Acres (Austin) · Infinity Park McAngus Road (Austin)*

Electrical Designer: Substations — Westwood Professional Services, Austin, TX *JAN 2024 – JUN 2024*

- Built SCADA design schematics, physical wire diagrams, and 1-line / 2-line / 3-line plant diagrams; developed project sets end-to-end from templates and go-bys with self-check prior to turnover.

Property Manager — Cassa Grande, Dallas, TX *MAY 2015 – DEC 2024*

- Oversaw property operations, tenant relations, lease generation, and maintenance standards across 9+ years; sustained full occupancy through marketing strategy and conflict resolution.

PROJECTS

- **OpenChambers** — TX public meeting intelligence platform; scrapes, summarizes, and scores municipal meetings statewide. Founder, Crystal Shepherds LLC. Live at openchambers.vercel.app.
- **Texas Water Crisis Dashboard** — Interactive web dashboard analyzing statewide water demand, supply, and infrastructure across all 254 Texas counties through 2070; processed 436K+ data points using Python and Plotly.js for TXST Love Data Week 2026. Live at datathon-water-analysis.vercel.app.