Tony Semeraro

Senior Software Engineer
Location: Boston, Massachusetts
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Hands-on senior software engineer who builds and ships SaaS platforms, most recently taking Quick fill, a computational-geometry feature in Forma Takeoff, from UX concept to production. Strong in backend design and performance: rate limiting and abuse prevention, LLM-powered services, and platform-wide reliability and response-time work across UI, API and SQL. Leads cross-team delivery from architecture through release readiness, including security remediation.

Skills

- **Languages:** Ruby, JavaScript / TypeScript, SQL; working knowledge of Go and Python
- **Backend and APIs:** Ruby on Rails, Node.js (Express, Koa), REST, GraphQL, WebSockets
- **Frontend:** React, TypeScript
- **Data and search:** PostgreSQL, MySQL, Redis, MongoDB, Elasticsearch
- **Infrastructure:** AWS, Docker and containerized development environments, CI, observability and alerting
- **Specialties:** performance engineering, image processing and computational geometry, rate limiting and abuse prevention, security remediation, API design, LLM-integrated services, technical discovery and architecture

Experience

Autodesk Senior Software Engineer: October 2019 – Present
Boston, MA

Forma Takeoff and Forma Estimate, including ProEst (2023 – 2026)

- Architected and delivered **Quick fill**, a Forma Takeoff workflow that turns one click inside a region of a 2D construction drawing into an area takeoff, replacing manual tracing that took dozens of clicks and often a minute or more. Took it from UX concept to production, owning discovery, architecture, algorithm design, performance, and release readiness, and negotiating UX tradeoffs with senior stakeholders.
- Designed a format-independent image-processing pipeline for raster and vector drawings (multi-seed fill, morphological cleanup, contour tracing, polygon simplification) that reduced pathological outputs from thousands of vertices to usable geometry while staying interactive on modest hardware.
- Led technical onboarding of ProEst, an acquired estimating product: containerized its full development stack (about nine services) so Autodesk engineers could contribute for the first time, and established monitoring and alerting.
- Closed out three penetration tests on ProEst, a mix of internal and external, as engineering lead and point of contact, owning each end to end: onboarding the testers, triaging findings, implementing or delegating fixes, and driving retest and sign-off.
- Designed and implemented a configurable, Redis-backed token-bucket rate-limiting library with per-route and per-tenant limits for internal services and public API endpoints; deployed without downtime, it has stopped abuse in production before it reached customers.
- Prototyped an LLM-powered abuse-detection service for system-generated email using internally hosted models, and demonstrated it to leadership.
- Architected the patterns for, and built a substantial part of, the Forma Estimate (then ACC Estimate) export feature across three repositories and several teams.
- Led two contract developers in building and shipping ProEst's estimate-item import/export tool.

BIM 360 Field (2019 – 2023)

- Advanced a multi-year Rails 3.2 → 4 upgrade to production, unblocking other engineering work.
- Contributed to a platform-wide performance and reliability effort across UI, API, and SQL that stabilized uptime and response times under rapidly growing load.

Openbay.com Software Engineer: August 2016 – October 2019
Cambridge, MA

- Reworked the web and mobile API to support a guest-user experience, doubling customer engagement and lifting revenue by nearly ten percent.
- Built an automated quoting system that replaced a costly manual process with immediate, consistent quotes.
- Extended the payment platform to support split payment sources and settlement through Stripe, SAP, and other large partners.
- Led the engineering team through re-architecting a large, highly visible part of the site into a SaaS offering.

Earlier experience Software Engineer, DrugDev and PayLease

- Extended a clinical-trial data-ingestion backend to handle complex, varied data feeds.
- Implemented OAuth and social login for a flagship application's public portal, and created a user-behavior logging framework for business-intelligence analysis.

Education

University of Connecticut - Storrs, CT — General Studies, B.G.S.
Valencia College - Orlando, FL — Computer Science, A.S.