BORUT BALAZEK

Senior Software Engineer - Backend & AI Engineering, TypeScript, Node.js

borut@bobalazek.com +386 40 700 833 bobalazek.com borut-balazek bobalazek Ljutomer, Slovenia

SUMMARY

Senior software engineer with 15+ years delivering products. First developer alongside the CTO at ClassCharts for eight years as it grew past ten million registered accounts. Since then, smart-city backend architecture, production LLM classification at MarketAlerts, and usage metering and memory for an AI tutor used by millions of students. I own delivery from requirements through production.

EXPERIENCE

Senior Software Engineer

AI tutoring startup | Apr 2026 - Jun 2026

AI tutoring and exam preparation for millions of secondary-school students across web, iOS and Android, with student, parent and teacher roles.

- Replaced message quotas with cost-based usage metering across every plan tier, at millions of requests a month. Requests are checked before the model call and charged only on success.
- Built the tutor's asynchronous memory pipeline on Inngest: conversation fact extraction, nightly deduplication and pruning, with capped concurrency spread over four hours to keep database load flat.
- Added Stripe credit top-ups alongside subscriptions and usage administration, with purchasing-power-parity pricing by currency and country and Stripe as the source of truth.
- Worked in agile sprints with the CTO and product team. Handed several dozen usage and rollout tests to external QA. TypeScript, Next.js, tRPC, PostgreSQL on PlanetScale and Vercel.

Founding Engineer - Full-Stack

MarketAlerts | May 2024 - Mar 2026

AI investment intelligence across 20+ global markets. Part-time alongside the smart-city engagement, full-time from January 2025 and later hands-on CTO. The company wound down in March 2026.

- Took over an agency-built platform with a cross-functional team. Owned the Next.js web app, iOS and Android apps, Express REST API, Payload CMS and Stripe billing in TypeScript and Node.js.
- Built the BullMQ alert engine across 20+ queues: evaluation, combination logic, email, Telegram and push delivery, with idempotent processing to prevent duplicate alerts.
- Owned the AI layer alongside the Python/FastAPI data team: hierarchical financial-signal classification, earnings-call summaries moved from OpenAI to Gemini, and analyst-rating and congressional-trade integrations, on Airflow and Kubernetes.
- Wrote a React Native charting library when existing options were too slow. Owned GitHub Actions delivery and infrastructure, migrating Docker Swarm on AWS EC2 with S3 to GCP Cloud Run.

Senior Backend Engineer

Martian & Machine | Aug 2024 - Feb 2025

Government smart-city programme in the Middle East, delivered across five city domains and several vendor teams.

- Designed and built 20+ Kubernetes microservices across five city domains, with separate databases and APIs. Domain-driven design and C4 models from external specifications gave vendor teams clear contracts for parallel delivery.
- Built NestJS and TypeScript platform services for users, onboarding, notifications, certification and mail, with APISIX, Keycloak and GitLab CI, in Scrum sprints.
- Designed the event layer from IoT gateways inward: Kafka streaming, Cassandra smart-metering telemetry and PostgreSQL, monitored through Grafana, Prometheus and Loki.

Senior Software Engineer

Edukey Education / TES Global | Nov 2015 - Dec 2023

Eight years full-time on ClassCharts and Provision Map (School Robins, Safeguard my School). Acquired by TES Global; contracted directly with TES from 2021.

- Joined as the first developer alongside the CTO; helped grow the platform from hundreds of thousands to more than ten million registered pupil, parent and teacher accounts across thousands of UK schools, with tens of millions of behaviour events a year. One of the two most prolific contributors as the team grew past a dozen engineers.
- Modernised the CakePHP monolith in place with React micro frontends and Node.js APIs, without maintaining a second application. Led full rewrites of Literacy Assessment Online and Report Comment Bank.
- Owned React Native mobile apps, push notifications, offline handling and release/signing across six store listings, with a couple of million downloads. Rebuilt the parent and pupil apps from webviews in React in 2018.
- Scaled infrastructure from three servers to roughly 100 instances at around 1,000 requests per second, across Rackspace, GCP and AWS. Introduced Docker and Kubernetes; ran virus scanning on Cloud Run, then Lambda.
- Wrote the tooling and led a 40+ TB asset migration while the platform stayed up. Optimised a MySQL estate of a couple of TB, including tables with billions of rows.
- Introduced Scrum, GitFlow and CI/CD. Owned QA across four products with their product managers: Cypress on GitHub Actions, unit and integration tests, and mentoring the QA engineer.

- During the March 2020 school closures, moved teacher functionality to parent and mobile apps within days and helped ship homework uploads with virus scanning in under two weeks.
- One of four code owners: reviewed across the repository, mentored junior developers and onboarded teams through growth and acquisition.

Independent Software Engineer
Corco Labs (Corcosoft until 2025) | Aug 2012 - Present

My company since 2012, ~70 projects. Client work above ran through Corco Labs as B2B contracts; clients abroad could not employ me in Slovenia.

- Owned scoping, architecture, delivery and maintenance with clients in Germany, Austria, Switzerland, the UK, US and Slovenia: FinTech, IoT, energy, EdTech and consumer products, internal tools, configurators, booking systems and campaign platforms.
- Through partner agencies, delivered work for Philips, RWE, Innogy, Stadtwerke Krefeld, Ruhrbahn, Radenska, Perutnina Ptuj, Medex, Danone, Red Bull, Les Mills, Sportina, Thermana Lasko and Ljubljana Airport.
- Since July 2026, building my own products and engineering tools; this work continues in my own time or pauses when I join a team.

Web Developer
Alstar d.o.o. | Jun 2011 - Jan 2013

Slovenian communications provider. First role, started as a student job.

- Built and maintained company and client Joomla sites with e-commerce and business integrations.
- Implemented vTiger CRM with custom modules and workflows for client sales and internal processes, working directly with clients from requirements through deployment.

SKILLS

Backend	Node.js, Express, NestJS, Fastify, REST APIs, GraphQL, WebSockets, tRPC, FastAPI, Symfony, Bun, OAuth, Stripe
Languages	TypeScript, JavaScript, SQL, PHP, Python, Bash, Rust
Data	PostgreSQL, MySQL, Redis, MongoDB, ClickHouse, Cassandra, Elasticsearch, Airflow, PlanetScale, Drizzle, Qdrant, Meilisearch
Messaging & Jobs	BullMQ, RabbitMQ, Kafka, Google Cloud Pub/Sub, Inngest
AI & LLM	OpenAI API, Anthropic API, Azure OpenAI, Gemini, Vercel AI SDK, RAG, Vector search, Embeddings, Tool calling, Structured outputs, AI agents, LLM pipelines, MCP, Claude Code, Codex, Cursor
Infrastructure	AWS, GCP, Docker, Kubernetes, Linux, Terraform, Ansible, CI/CD, GitHub Actions, GitLab CI, ArgoCD, GitOps, Cloudflare, Vercel, Hetzner, Nginx, Keycloak
Architecture	Distributed systems, Microservices, Event-driven architecture, Domain-driven design
Testing & Observability	Jest, Vitest, Cypress, Playwright, Prometheus, Grafana, Loki
Frontend	React, Next.js, React Native, Astro, Tailwind

SELECTED PROJECTS & OPEN SOURCE

Metis	News aggregation and AI classification processing ~100K articles daily, with hybrid retrieval: self-hosted embeddings, Qdrant vector search beside Meilisearch keyword search, ClickHouse, Redis and BullMQ.
Pocket AI Gateway	Self-hosted gateway for OpenAI, Anthropic and Gemini clients in one Go process: model routing with fallback, weighted and cost strategies, scoped API keys, spend limits and per-request cost tracing. Open source, alpha.
Guestavo	Hospitality platform in beta: reservations, menus, events, campaigns, loyalty and a guest portal. Menu-scan turns photographed paper menus into structured digital menus. Built solo with coding agents. Next.js, Fastify, PostgreSQL, Drizzle, Redis, BullMQ, Stripe and Kubernetes via ArgoCD.
AfterGather	Media hub for photographers: private client galleries with proofing plus QR-based guest uploads at live events. Same stack, S3-compatible storage, GDPR export. Active behind a public waitlist.
MoaiTime	Open-source, self-hosted productivity platform: calendar, tasks, habits, notes and focus. TypeScript, React, NestJS, PostgreSQL, Redis, Kubernetes.
Babylon.js	Contributed to the WebGL 3D engine maintained by Microsoft, on the physics engine and asset loading, and wrote two 3D boilerplates.

EDUCATION

Software Developer
School of Electrical and Computer Engineering Ptuj | 2007 - 2011

LANGUAGES

English - Fluent | German - Fluent | Slovenian - Native