BORUT BALAZEK

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

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SUMMARY

Joined ClassCharts as its first developer alongside the CTO and stayed eight years as it grew from hundreds of thousands to more than ten million registered pupil, parent and teacher accounts, through its acquisition by TES Global. 15+ years across the stack. At MarketAlerts, owned the application and infrastructure. My latest client engagement was an AI tutoring startup from April to June 2026, where I shipped cost-based usage metering and long-term memory for the tutor. Since July 2026, building my own products and engineering tools through Corco Labs, alongside my search for a long-term role. AI-assisted development daily for several years, with automated checks and review by a second model and a human.

EXPERIENCE

Senior Software Engineer - Independent Products

Corco Labs | Jul 2026 - Present

Own products and tools, more than a dozen of them, built under my own company, like every client engagement listed here.

- Built Guestavo, a guest-engagement platform for hospitality venues, live in beta, and AfterGather, a media hub for photographers with QR-based guest uploads at live events, behind a public waitlist - both end to end: Next.js, Fastify, PostgreSQL with Drizzle, Redis, BullMQ workers, Stripe billing, GitHub Actions CI/CD and deployment to Kubernetes through ArgoCD.

Senior Software Engineer

AI tutoring startup | Apr 2026 - Jun 2026

AI tutoring and exam-preparation platform used by millions of secondary-school students across web, iOS and Android. B2C consumer product with student, parent and teacher roles.

- Designed and shipped cost-based usage metering across every plan tier on a TypeScript, Next.js, tRPC and PostgreSQL platform, replacing message-count entitlements at millions of requests a month.
- Kept overnight database load flat by building the AI tutor's memory system as an asynchronous pipeline on Inngest durable execution: an LLM extraction pass mines durable facts out of conversations and a nightly reconciliation pass dedupes and prunes them, fanned out per user with a concurrency cap and spread across a four-hour window.
- Added credit top-ups alongside subscriptions and built the usage administration interface end to end, with a purchasing-power-parity Stripe price catalogue keyed on currency and country and Stripe as the source of truth.
- Handed the work to an external QA team with several dozen tests covering every usage path and the switch from message quotas to usage metering, working in agile sprints directly with the CTO and the product team and shipping through Vercel onto PostgreSQL on PlanetScale.

Founding Engineer - Full-Stack

MarketAlerts | May 2024 - Mar 2026

AI investment-intelligence startup: real-time signals across 20+ global markets. Part-time at first alongside the smart-city engagement below, full-time from January 2025 and later its hands-on CTO, until the company wound down in March 2026.

- Owned the product end to end in TypeScript and Node.js - the Next.js web app, the iOS and Android apps, the standalone Express REST API serving both, the Payload CMS and Stripe billing.
- Took over an agency-built market-intelligence platform and developed it in an agile cross-functional team spanning frontend, backend/data APIs and design.
- Built the alerting engine on a BullMQ worker across 20+ background queues: evaluation, combination logic, delivery by email, Telegram and push, and idempotent duplicate handling so a repeated upstream signal never fanned out twice.
- Worked on the Python/FastAPI data platform alongside the data team and owned its AI layer, on Airflow pods running on Kubernetes: hierarchical GPT classification of financial signals, an earnings-call transcript summariser later migrated to Gemini, and source integrations for analyst ratings and congressional trades.
- Wrote a React Native charting library from scratch when no existing library was fast enough, and owned architecture and infrastructure: Docker Swarm on AWS EC2 with S3, GitHub Actions pipelines per application, and the migration onto 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 the backend architecture: 20+ microservices on Kubernetes across five city domains, each with its own database and API, using domain-driven design with clean contracts so several vendor teams could build in parallel.
- Built the platform services the city domains ran on - user, onboarding, notification, certification and mail - in NestJS and TypeScript, with APISIX as the API gateway, Keycloak for identity and GitLab CI for delivery, in Scrum sprints.
- Translated specifications handed over by an external consultancy into C4 architecture models, which became the reference the vendor teams built against.
- Designed the event-driven layer from the IoT gateways inward: Kafka for event streaming, Cassandra for time-series smart-metering telemetry, PostgreSQL for general storage, and Grafana, Prometheus and Loki for monitoring.

Senior Software Engineer

Edukey Education / TES Global | Nov 2015 - Dec 2023

UK EdTech behind ClassCharts and Provision Map, acquired by TES Global during the engagement, with the contract moving to TES Global directly in 2021. Eight years full-time across their product range: ClassCharts, Provision Map with School Robins and Safeguard my School, Literacy Assessment Online and Report Comment Bank.

- Joined as the first developer alongside the CTO when the products served hundreds of thousands of users, and helped grow the platform to more than ten million registered pupil, parent and teacher accounts across thousands of UK schools, logging tens of millions of behaviour events a year. Stayed one of the two most prolific contributors as the team grew past a dozen engineers.
- Modernised the product in place, carving React micro frontends out of the CakePHP monolith with no switch-over date and no second application to maintain, wrote the newer parts of the API in Node.js, and led full rewrites of Literacy Assessment Online and Report Comment Bank.
- Owned the mobile estate end to end - React Native shells around web views, then a full rewrite of the parent and pupil apps in React in 2018 - with push notifications, offline handling for bad school wifi, and the release and signing pipeline for six store listings, a couple of million downloads between them.
- Took the infrastructure through three generations as load grew: Rackspace to GCP to AWS, three servers to roughly 100 instances, around 1,000 requests per second by the end. Brought Docker into the company first, then Kubernetes as it scaled. The virus scanner ran serverless on Cloud Run, later AWS Lambda.
- Led the migration of 40+ TB of images and assets between cloud providers, writing the migration tooling, with the platform staying up throughout. Ran ongoing SQL optimisation across a couple of TB of MySQL data, including tables with billions of rows.
- Introduced Scrum, GitFlow and the CI/CD pipelines, and owned testing and QA across four products with their product managers: Cypress on GitHub Actions, unit and integration coverage, and mentoring the QA engineer who grew the suite.
- When UK schools closed in March 2020, moved teacher-only functionality onto the parent and mobile side within days, and helped ship homework file submission with virus scanning in under two weeks.
- One of four code owners on the main repository: reviewed work across the codebase, mentored junior developers and onboarded the teams that joined as the company grew and was acquired by TES Global.

Independent Software Engineer

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

My own company since 2012. Most clients were abroad and could not employ me in Slovenia, so every engagement listed here was a B2B contract with my company. ~70 projects across web applications, infrastructure, integrations, IoT, data systems and product development.

- Managed each project from scoping and architecture through implementation, deployment and long-term maintenance, working directly with clients in Germany, Austria, Switzerland, the UK, the US and Slovenia.
- Delivered client projects across FinTech, IoT, energy, EdTech and consumer brands - full-stack products, internal tools, configurators, booking systems and campaign platforms.
- Through partner agencies in Germany and Slovenia, worked for Philips, RWE, Innogy, Stadtwerke Krefeld and Ruhrbahn, and for Radenska, Perutnina Ptuj, Medex, Danone, Red Bull, Les Mills, Sportina, Thermana Lasko and Ljubljana Airport.

Web Developer

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

Slovenian unified-communications provider: VoIP, virtual PBX, hosting and CRM. First role, started as a student job.

- Built and maintained the company site and client websites on Joomla, with e-commerce and business integrations.
- Delivered a series of vTiger CRM implementations for their clients, customising modules and workflows to each client's sales and internal processes, and worked with each client directly 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	Guest-engagement platform for hospitality venues: reservations, digital menus, events, campaigns, loyalty and a guest portal, with menu-scan turning a photographed paper menu into a structured digital one. Next.js, Fastify, PostgreSQL with Drizzle, Redis, BullMQ, Stripe. Live in beta.
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.
Synaptic	Contributed to the JavaScript neural-network library and built a trainer on top of it.

EDUCATION

Software Developer

School of Electrical and Computer Engineering Ptuj | 2007 - 2011

LANGUAGES

English - Fluent | German - Fluent | Slovenian - Native