



# DANIEL NECESAL

## Head of Engineering

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## PROFESSIONAL SUMMARY

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Head of Engineering at Tomplay: leads the ~10-person engineering team (Unity, audio, note recognition, backend, web), reports to the CEO, and owns technical strategy and delivery for a music learning platform with 2M registered users on iOS, Android, Windows, macOS and web. Took the team from 2 feature releases a year to 6 in the first nine months of 2026 and cut median open-bug age from 374 to 23 days, while holding 99.5% crash-free sessions through a full platform rebuild. Built the AI-augmented engineering workflow (AI review on every pull request, agentic coding pipelines) and owns company-wide AI adoption.

7+ years in Unity/C#/.NET and C++, four of them leading engineering teams; background in regulated medical device software (IEC 62304, ISO 13485), real-time 3D/VR and graphics engineering; still hands-on, anywhere from GPU profiling to roadmap negotiation.

## PROFESSIONAL EXPERIENCE

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### Head of Engineering

**TOMPLAY** (Nov 2024 – Present) | Lausanne, Switzerland (Remote)

Head of Engineering (Mar 2026 – Present) · Senior Unity Software Engineer (Nov 2024 – Feb 2026) · ~10-person fully remote team working async in written English

- **2 to 6 feature releases a year** (6 in the first nine months of 2026), with a patch release every ~11 days and daily first-party code output up about 8x across the team: introduced pull requests, protected branches and required reviewer approval on every PR (since April 2026), release-candidate discipline and CI/CD automation.
- **99.5% crash-free sessions through a full platform rebuild** (score player in late 2024 through the 7.0 release in May 2026): ffmpeg-based video, UI Toolkit UI, a new native audio engine, real-time note recognition and four Unity upgrades (2022 LTS to 6.3 LTS).
- **Grew and reshaped the team:** hired a Unity engineer and a backend engineer, promoted one developer into a lead role and restructured QA ownership. Own hiring, performance management and org design in partnership with the CEO and Product.
- **Median open-bug age 374 to 23 days** and 94% of open bugs scheduled, by making quality visible: one Jira project for all app work, coaching the PM into the role, and a production reliability framework (monitoring, incident runbooks, postmortems) after a 50x bot-traffic surge.
- **AI-augmented engineering workflow, owned company-wide:** AI review on every PR and release candidate, agentic coding pipelines orchestrated and reviewed personally, and the whole AI deployment: adoption strategy, seat and cost management, permissions, a shared skills repository and Slack integration.
- **Internal-data connector for Claude** (backend, per-team permission model): customer support now finds accounts and runs refund checks from a Claude artifact built in a day, replacing an estimated two weeks of backend work, and marketing generates deep links in hours instead of days.
- **Custom rendering pipeline for the score player:** multi-camera compositing with render layers and render textures, camera-to-texture baking, custom shaders and draw-call batching, plus a Burst/Jobs image-analysis pass that places note names automatically; holds the 60 FPS vsync target across 6M+ playback sessions per quarter.
- **Innosuisse grant:** authored the validation protocol and the technical responses to expert reviews for the company's seven-figure recommendation-system project, securing the second funding tranche (March 2026), with the final tranche due at project close.

## Lead Software Engineer

MINDMAZE (Sep 2022 – Oct 2024) | Lausanne, Switzerland

- Engineering lead on a real-time 3D/VR rehabilitation product (Unity, Windows and Android); technical lead and mentor for 3-4 developers.
- Led 5 major user-facing projects from breakdown to launch in a cross-functional team.
- Delivered new health software under IEC 82304-1, IEC 62304 and ISO 13485, owning code review, testing and regulatory documentation.
- Led the product's render-pipeline migration to URP; prototyped a Kinect-driven therapeutic game on HDRP at a company hackathon.
- Ported the main product to Android and optimized it for low-end hardware.
- Owned the structure and dependencies of a large Unity project; built the Jenkins CI pipeline for automated testing and deployment.

## EARLIER EXPERIENCE

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- **Unity Mobile Game Developer**, Tinysoft, Brno (Jan – Jul 2022): built campaign mode and a level-sharing framework for [SandBox: Sand Pixel Simulator](#), lifting user engagement 50% in 3 months.
- **Indie co-founder and instructor**, Brno (2020 – 2022): co-founded the studio Brotagonists and published [Octomancer - Octopus Adventure](#) (Firebase multiplayer, procedural level generation); taught [Python](#) and [C#/Unity game development](#) at ICT Pro & Skillmea; scripter at Bohemia Interactive (contract, 2021).
- **Microoptics Engineer**, EPFL, Lausanne (Feb – Jul 2019): built a [holographic microscope and its controller](#) for the nano-photonics laboratory; [published paper](#).

## EDUCATION

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### Physical Engineering and Nanotechnology, Master of Engineering

BRNO UNIVERSITY OF TECHNOLOGY (2015 – 2020) | Brno, Czech Republic

## LANGUAGES AND DETAILS

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English (C2), German (A2), French (A1), Czech (native)

Swiss residence permit B (EU/EFTA citizen) · Driving licence A + B

## NOTABLE PERSONAL PROJECTS

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All hand-written, before AI coding tools.

- **VoxelPainter**: 3D voxel painting tool in Unity with real-time marching cubes mesh generation on compute shaders, optimized for interactive editing. [GitHub](#), [explanation video](#), [download](#).
- **Thinking with Portals VR**: custom render pipeline for recursive portal rendering in VR. [Demo](#).
- **Smart Rooms: Procedural Level Generator & Room Builder**: published Unity Asset Store tool. [Asset Store](#), [demo](#).

## TECHNICAL SKILLS

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- **Rendering**: Draw-call batching and instancing, LOD and culling, large-scene memory budgeting, URP/HDRP migration, custom render pipelines (VR, 2D draw-call compositing), compute shaders, transparency/shader optimization, mobile GPU profiling
- **Programming languages**: C#, C++, Python, TypeScript, JavaScript, PHP, SQL, HLSL
- **Leadership**: Engineering Management, People Management, Technical Strategy, Org Design, Hiring, Performance Management, Roadmap Planning, Incident Response, Medical Software Regulatory Documentation
- **AI Engineering**: Agentic coding pipelines, AI code review, Claude Code (local and cloud), Copilot, MCP tooling and connectors, AI adoption strategy and guardrails
- **Engineering**: Software Architecture, TDD, UI Toolkit, CI/CD Automation, Production Monitoring, VR/AR/MR, Performance Profiling & Optimization
- **Tools and frameworks**: Unity, .NET, Unity Burst, Unity Jobs, UniTask, NUnit, GitLab CI, GitHub Actions, Jenkins, Firebase, Azure
- **Web technology**: MySQL, FastAPI, Node.js, Vue.js, ASP.NET, MongoDB, REST APIs