Pavel Anpin

Senior Software Engineer | Distributed Systems | 10+ years with .NET

Email | Website | GitHub | Matrix | LinkedIn

SUMMARY

Senior Software Engineer with 12+ years designing event-driven platforms for smart buildings, multimedia installations and other cyber-physical systems.

Proven success in building high-performance, scalable, and maintainable systems across domains.

Passionate about functional programming, reproducibility, and distributed architectures. Always open to new challenges - whether consulting, partnering on ambitious ideas, or supporting teams that value thoughtful engineering.

In my spare time, I enjoy learning new things, cycling, exploring generative visuals, baking and reflecting on the nature of consciousness.

SKILLS

- **Languages:** F#, C#, SQL, C++, Nix, Rust, Lua, Bash, PowerShell, Python, HTML, CSS, JavaScript, Netlinx, ESP-IDF, Shaders (HLSL, GLSL)

- **Backend & Distributed:** Akka.NET, Giraffe, ASP.NET/ASP.NET Core, CQRS/Event Sourcing, Actor Model, gRPC, REST, WebSockets, WebRTC, SignalR, OAuth2/OIDC, JWT, OpenAPI, OpenTelemetry, low level socket programming,

- **Data & Observability:** PostgreSQL/TimescaleDB, ClickHouse, Redis, MQTT, RabbitMQ, Grafana, Prometheus, OpenTelemetry, jupyterlab,

- **DevOps & Infra:** Nix/NixOS, Docker, Linux, systemd, Windows, Cloud (Azure, AWS, DO, hetzner), nginx/openresty, IIS, WireGuard, SSH, CI/CD pipelines, MSBuild, FAKE, Paket,tmux, nvim, git, rider, dotMemory, dotPeek

- **Frontend & Apps:** Fable, Avalonia, MAUI/Xamarin.Forms, WPF, SkiaSharp, Astro, TailwindCSS, HTMX, Vega, plotly.js, d3.js, p5.js, CSS, HTML, Figma, Adobe Illustrator

- **Theoretical:** Category theory, algorithms, digital signal processing, linear algebra, statistics, machine learning, optimization, SCRUM/Agile/Kanban, neural networks, computer networks, control theory

- **Live media tools:** vvvv, TouchDesigner, MaxMSP/pd, SuperCollider, Ableton Live, Crestron, Biamp, Dante

WORK EXPERIENCE

Alerio

Technical Founder | Dec 2022 - Present

Co-founded a smart-building software startup specializing in incident prevention, energy usage tracking, cost minimization, and enhanced satisfaction for teams and clients. Architected and delivered full-stack F# applications with Fable, Giraffe, Akka.NET and TimescaleDB/PostgreSQL. Designed greenfield systems including real-time dashboards, automation rule engines and offline-first voice control over WebRTC. Led deployment automation via Nix/NixOS using declarative containers. Built and maintained self-hosted infrastructure with PostgreSQL, Grafana, Clickhouse, and more. Ensured system reliability, performance, and cost efficiency.

Independent Contractor

Self-employed | Dec 2016 - Present

Provided expert consulting services and bespoke software solutions across diverse industries, specializing in audiovisual installations, automation systems, and full-stack application development. Delivered and maintained cross-platform apps built with Xamarin.Forms and ASP.NET, transitioning them smoothly to MAUI/Avalonia with ASP.NET Core, while ensuring robust CI/CD practices and comprehensive testing. Transitioned client systems from C# to functional programming using F# and modern frameworks (Akka.NET, Giraffe, Avalonia), significantly enhancing maintainability and efficiency. Mastered a wide array of technologies including C#, F#, Fable, NixOS, Rust (embedded), PostgreSQL/TimescaleDB, Event Sourcing, CQRS, WebRTC, Astro, and advanced multimedia frameworks, demonstrating adaptability in tackling complex technical challenges.

IMS Group Ltd

Chief Engineer | Jun 2016 - Sep 2017 (1 yr 4 mos)

Led engineering workflow development, provided team training, and supervised project execution for a systems integrator serving the hospitality industry. Managed comprehensive project lifecycles from design through installation and client handover, specializing in advanced audiovisual systems integration to ensure high-quality results and client satisfaction.

AudioVideoSystems Ltd

Project Engineer | Dec 2015 - May 2016 (6 mos)

Provided pre-sales engineering support, coordinating audiovisual projects and liaising closely with clients and contractors. Supported project teams through technical consultations and structured

client communication, managing challenging project scenarios effectively.

8 Ohm Ltd

Project Engineer | Aug 2013 - Nov 2015 (2 yrs 4 mos)

Advanced from intern to project engineer, specializing in the design, programming, and commissioning of tailored audiovisual solutions. Directly communicated with clients and contractors, delivering reliable installations and comprehensive post-installation training. Demonstrated adaptability, technical skill, and strong commitment to delivering solutions customized to meet diverse client requirements.

Open Source Contributions

- Ported Akka.NET Management DNS-based service discovery from Scala Akka; added async DNS provider, examples, tests, and docs—enabling reliable cluster bootstrapping.
- Maintainer/contributor to nixos/nixpkgs packages and modules, improving reproducibility and developer tooling.
- Authored a popular MAUI/Xamarin.Forms context menu plugin with >60 GitHub stars.
- Stabilized Akkling F# library after upstream changes
- Contributed to reviving and stabilizing tweag/jupyenv, enabling better Nix-based Jupyter environments.

Community Engagement

- Contributed to Budka Tbilisi, a community-driven artist-run space supporting cultural events, exhibitions, and experimental performances. Assisted with technical infrastructure and event production.
- Participated in open calls and discussions hosted by scanlines.xyz, contributing experimental video works and exploring community-driven media arts. Explored feedback-based generative audio visual works using vvvv, focusing on emergent forms and cybernetic aesthetics in audiovisual performance contexts.

EDUCATION

Siberian State University of Telecommunications and Information Science

Engineer's degree, Audio Visual Technologies | Sep 2009 - Jun 2014 (5 yrs)

Graduation Work: Project of audiovisual complex for universal hall in the hotel "Hermitage" in the city of Yekaterinburg

KEYWORDS

Functional Programming   Distributed Systems   Event Sourcing & CQRS   Nix & NixOS

Akka.NET   IoT   Full-stack development   Embedded development   Vibe coding cleanup

Interactive Installations   Control systems   Audiovisual installations