

Pavel Anpin



Creative Technologist | Audiovisual Systems | Interactive Installations

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SUMMARY

Creative technologist with 12+ years building multi-media installations and smart environments. Skillful at bringing cyber-physical systems to life from both hardware and software angles. Background in luxury hospitality and enterprise AV, multimedia performance contexts, and full-stack software engineering.

SKILLS

- **AV & Interactive Tech:** projection, lighting, sound, sensor integration, computer vision, multicast networks, IP audio/video, DMX, OSC, MIDI, AVB, Dante. Brands: Panasonic, Sony, AMX, Crestron, Extron, Biamp, QSC, Bose, Void Acoustics, etc
- **Creative Tools:** vvvv, TouchDesigner, OpenFrameworks, MaxMSP, pd, SuperCollider, madMapper, Ableton Live, shaders (GLSL/HLSL), p5.js
- **Hardware & Prototyping:** wiring, rack assembly, PCB rework, soldering (SMD/through-hole), microcontrollers (ESP32/Arduino), AutoCAD, EASE
- **Programming:** F#, C#, C++, Rust, Lua, Netlinx, Bash, PowerShell, skiasharp, webgl, webgpu, Astro, HTML, CSS, JS
- **Backend & Infra:** Akka.NET, ASP.NET Core, Giraffe, gRPC/WebSockets/WebRTC, TimescaleDB/PostgreSQL, MQTT, NixOS, Docker, CI/CD

WORK EXPERIENCE

Alerio

Technical Founder | Dec 2022 - Present

- Built real-time dashboards and spatial visualization integrating IoT sensors, AV devices and for interactive building control and monitoring.
- Prototyped a C# solution, gathered market and customer feedback and turned it into a full-stack F# platform (Giraffe/ASP.NET Core, Akka.NET, SignalR, Fable, HTMX, Vega, TimescaleDB/PostgreSQL).
- Implemented reproducible, declarative infrastructure with Nix/NixOS and a self-hosted stack (Grafana, ClickHouse, Forgejo, Authentik).
- Built DSL for efficient hardware integration, runtime module registration from text files, automation rules and data pipelines.

- Implemented WebGL reactive graph visualization for arbitrary data from modules: 50000 sparse datapoints loaded in less than 5 seconds in a WebGL rendered graph.
- Implemented offline-first voice control over WebRTC for on-prem devices with self-hosted STT/TTS/LLM pipeline for user intent recognition and response, including smart speaker firmware for ESP32.
- Built automated build/publish pipeline for product website, enabling A/B testing of marketing materials.

Independent Contractor

Creative Tech & AV Systems | Dec 2016 - Present

Delivered and maintained bespoke cross-platform native apps (Xamarin.Forms/MAUI, Avalonia), full-stack web services (ASP.NET Core, Giraffe, Akka.NET) and embeded firmware (ESP-IDF, Rust), implemented CI/CD pipelines, and migrated client systems from .NET Framework/C# to dotnet8/F# using Akka.NET, Giraffe, and Avalonia-improving maintainability and scalability.

Highlights:

- Velonetic: Presentation room control system with custom CMS for Tizen signage, real-time web control for AV installation, scheduling, transcoding, and integration with Crestron/Biamp/Dante, custom windows kiosk shell to control/update TouchDesigner players, GreenHippo media server. Reproducible builds with NixOS and deployment CI/CD integration testing.
- BrightlinkAV: app to control video matrix and streaming systems; original ASP.NET + XF app, migration to MAUI and .NET Core, Azure cloud deployment, and CI/CD automation for app publishing.
- Countless comercial AV installations, including hotels, resorts, and corporate event spaces.

IMS Group Ltd

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

Led engineering workflow for a newly formed systems integrator Delivered turn-key hotel and corporate AV systems

AudioVideoSystems Ltd

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

Pre-sales engineering support, coordinating with clients, contractors and internal teams.

8 Ohm Ltd

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

Advanced from intern to engineer. Designed, commissioned and programmed bespoke audiovisual solutions. Directly communicated with clients and contractors, delivering reliable installations and comprehensive post-installation training.

Open Source & Community

- Participated in media-arts communities (Budka Tbilisi, scanlines.xyz) with generative audiovisual works (vvvv, feedback systems, emergent visuals).
- Ported Akka.NET Management DNS-based service discovery from Scala Akka.
- Maintainer/contributor to nixos/nixpkgs
- Authored a popular MAUI/Xamarin.Forms context menu plugin with >60 ★.

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

CERTIFICATIONS

- Certified Programmer for many brands e.g.: Crestron, AMX, Extron, Biamp, Helvar and more
- Dante Level 1 & 2