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Hiring Manager, NDI:

I'm a Senior/Staff A/V software engineer who has spent two decades building real-time audio/video systems across Windows, macOS, Linux, Android, and various SBCs. I maintain **DistroAV (OBS-NDI)** (~6M downloads) and work daily in **C/C++**, **C#.NET**, and **Qt** on low-latency media pipelines. I'd like to bring that experience directly to NDI's tools and SDK.

High-impact items I can deliver

1. **NDI Screen Capture HX - add webcam capture.** Parity with non-HX via shared device abstraction.
2. **NDI Router - add transcoding (Non-HX ↔ HX).** Per-route transcode with adaptive bitrate, GPU-accelerated encode (H.264/HEVC), and route-level metrics (latency, drops, encode time, bitrate).
3. **Normalize application naming across Windows and macOS.** One canonical name per tool reflected in app names, bundle IDs, CLIs, About boxes, and docs, with possible shims/aliases to avoid breaking scripts.
4. **Consistent modernized NDI redistributable (Win/macOS/Linux).** Versioned, side-by-side-safe redistributable; aligned layout and package support (MSI/MSIX, notarized .pkg + Homebrew, .deb/.rpm + pkg-config).
5. **Implement lightweight NDI Capture & Monitor on SBCs (Raspberry Pi, Jetson Nano, and peers).**
6. **SBC tools - NDI Capture & Monitor for Raspberry Pi/Jetson.**
Bring first-class NDI tools to ARM SBCs for field, stage, and embedded use cases.
Capture: libcamera/V4L2 + GStreamer to full NDI or HX (DMABUF, ALSA, drift correction).
Monitor: HW decode (Jetson NVDEC / v4l2-request), DRM/KMS rendering for low latency.
Packages for aarch64 with systemd units and minimal UI.

Why me

- **DistroAV (OBS-NDI) – Lead Maintainer.** Shipped reliability, auto-update, and UX fixes (e.g., **Visibility Behavior** options to prevent stalls on scene changes), modernize builds, triage, and telemetry across Windows/macOS/Linux.
- **Promethean (Mynd.ai) – Staff Android, AP9 Tech Lead.** A/V subsystems at scale for AOSP interactive panels; **500K+ devices**; owned 30+ applications, HDMI/EDID/CEC/ARC/DRM, AEC/AGC/NS, and CI/CD.
- **Motorola Solutions (Twisted Pair).** Real-time **RoIP/PTT** clients across Android/iOS/WinCE/BlackBerry with Opus/AMR/G711 and secure transport.
- **Google (GOOG-411/Voice).** SIP/VoIP automation and media backend performance tooling.
- **Diagnostics.** Wireshark dissector work, jitter/loss simulation, frame pacing and timestamp integrity tests, long-run stability harnesses.

First 90 days

- MVP **Screen Capture HX webcam** (Windows) with sync and long-run stability tests; macOS next.
- Prototype **NDI Router transcode** (Non-HX→HX) with adaptive bitrate and per-route metrics.
- Complete **naming + runtime** consistency spec and initial installers
- Prototype **SBC Capture alpha** on Raspberry Pi and/or Jetson (1080p30 HX target); Monitor next.

I'd value the chance to walk through these proposals and align them with your roadmap. Thanks for your time; looking forward to the conversation.

Sincerely,

Paul Peavyhouse

A/V Network Streaming Software Engineer (C/C++ • .NET • Qt • OBS/NDI)

Attachment: Résumé

Paul Peavyhouse - A/V Network Streaming Software Engineer (Target: NDI)

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SUMMARY - Senior/Staff software engineer with 20+ years building real-time audio/video systems, networked media, and cross-platform client SDKs. Lead maintainer of **DistroAV (OBS-NDI)**, a widely used open-source plugin enabling NDI® streaming in OBS Studio. Deep hands-on with **C/C++**, **C#/.NET**, **Qt**, Android/AOSP, and low-latency pipelines (WebRTC/VoIP, codecs, synchronization, device I/O). Track record shipping production-grade A/V features at scale, driving CI/CD, and supporting demanding enterprise and creator workflows.

CORE STRENGTHS (NDI/Networked A/V)

- **NDI & OBS Ecosystem:** Maintainer for the OBS NDI plugin (now **DistroAV**): capture, send/receive, format negotiation, async frame delivery, clock/timestamp handling, resilience on scene visibility changes, and user-facing UX for source behavior.
- **Languages/Frameworks:** **C/C++ (advanced)**, **C#/.NET (advanced)**, Qt 5/6, Python; Android (NDK/SDK), Kotlin/Java.
- **Realtime Media:** Low-latency A/V transport, buffering strategies, lip-sync, A/V drift correction, jitter management, device graph plumbing, audio mixing and filters (AEC/AGC/NS).
- **Codecs/Formats & I/O:** H.264, AAC, PCM, FLAC, Opus; HDMI/EDID/CEC/ARC, DRM/HDCP; color spaces and pixel formats; hardware and software encode/decode integration.
- **Networking:** TCP/UDP, Wi-Fi/Ethernet, QoS/throughput profiling, Wireshark dissectors; secure transport, auth, and telemetry.
- **Platforms/Build/Tools:** Windows, macOS, Linux; Visual Studio/.NET, CMake, Gradle/Maven, GitHub/GitLab; automated test, crash telemetry, CI at scale.

OPEN-SOURCE & COMMUNITY IMPACT

DistroAV (OBS-NDI) - Administrator/Maintainer, Lead Developer (2022–Present)

- Open Broadcaster Software NDI plugin (est. 2016; stewardship since 2022).
- **~6M downloads, ~3.5K+ stars, 400+ forks**; thousands of daily active users.
- Drove reliability and UX improvements, including **Source Visibility Behavior** options (Keep Active / Pause & Resume w/ Last Frame or Black) to make network sources robust under scene switching and preview/program transitions.
- Modernized build, auditing, and issue triage; established consistent crash/telemetry patterns; coordinated with OBS and creator community.

Related Projects (selected)

- **QtNdiMonitorCapture** - Qt6 app simulating NDI Studio Monitor + Screen Capture behaviors.
- **NvMaxineSdkDotNet / VoiceMod** - **C#/.NET** wrappers and apps integrating NVIDIA Maxine AFX (denoiser/NS) for streaming audio chains.
- **ObsChangeOfSceneryBot** - Automates OBS scene switching based on Discord active-talker.
- **NightVsKnight** - End-to-end PiP multi-PC streaming stack tying **.NET**, Windows audio, USB/HDMI matrix control, and OBS.
- **AI/Realtime/WebRTC** - Android **Push-to-Talk AI Assistant** using OpenAI Audio Realtime over WebRTC (Kotlin + Wear OS; Flutter); comparative testing of WebSocket vs WebRTC realtime APIs; Dart/Flutter **langchain_dart** WebRTC integration.

PROFESSIONAL EXPERIENCE

Mynd.ai / Promethean - Staff Android Software Developer, AP9 Tech Lead (2020–2024) • Seattle, WA

- Technical lead for **ActivPanel 9** (AOSP-based IFPDs: 65"/75"/86"); **500K+ panels shipped**.
- Owned A/V subsystems across HDMI/DP, EDID/CEC/ARC, DRM/HDCP; audio pipeline features (**AEC/AGC/NS**), device firmware/OTA, telemetry, and large-scale CI.
- Automated auditing of multi-million-line AOSP migrations; built test labs and release processes used cross-org.
- Stack: Android NDK/SDK (Kotlin/Java/C++), AWS, Firebase Crashlytics, GitLab CI.

Pebblebee - Senior Mobile/Android Developer, Tech Lead (2015–2020) • Issaquah, WA

Twisted Pair (Motorola Solutions) - Principal/Lead/SDM (2009–2014) • Seattle, WA

- Shipped **Push-to-Talk (RoIP)** mobile clients across Android/iOS/BlackBerry/Windows CE/Phone.
- Real-time audio pipelines (AMR/G711/GSM/Opus/PCM/Speex), cryptography (TLS/X.509), and large enterprise deployments (public safety, resorts, defense).
- Tooling across **Visual Studio/.NET/C#**, Java, J2ME, Python; CI, test frameworks, and field support.

Google - SDET (GOOG-411 & Google Voice VoIP backend; Chrome auto-update) (2005–2009) • Seattle, WA

Microsoft - SDET (RTC/Conferencing/Devices) (1998–2005) • Redmond, WA

Night55 - Vibe & Sonique MP3 players (1997-1999) • Bozeman, MT

SELECTED ACHIEVEMENTS ALIGNED TO NDI

- **Low-latency A/V over IP:** Designed/maintained networked media flows where sync, jitter buffering, and frame pacing are critical.
- **Cross-platform SDK & app delivery:** C++/C#/Java/Kotlin libraries and UI/UX for creators and enterprise users; hardened for long-running sessions.
- **Performance and stability:** Profiling hot paths (allocation, copy/convert, locks), minimizing frame drops, and safeguarding against stalls during source visibility changes and scene transitions.
- **Operational excellence:** CI/CD for 100+ repos and build jobs; reproducible builds and crash/telemetry pipelines to close the loop with users.

TECHNICAL SKILLS

- **Languages:** C/C++, C#/.NET, Kotlin/Java, Python, Qt 5/6, JavaScript/Node
- **Media/Realtime:** NDI (plugin ecosystem), OBS, WebRTC, VoIP/SIP, AEC/AGC/NS, Opus/AAC/PCM, H.264
- **Platforms:** Windows, macOS, Linux; Android (AOSP/NDK/SDK)
- **Tools/Build:** Visual Studio/.NET, CMake, Git/GitHub/GitLab, Gradle/Maven, Jenkins/Bamboo
- **Diagnostics:** Wireshark (incl. dissector work), crash analytics (Crashlytics), performance profiling
- **Cloud/Telemetry:** AWS (S3, EC2, Lambda, CloudFront, Cognito, DynamoDB), Firebase, MixPanel

PATENTS

- **WO2013116741** - Tip-Ring-Ring-Sleeve Push-to-Talk System and Methods
- **WO2013154722** - Pulsed Input Push-to-Talk Systems, Methods and Apparatus

EDUCATION

Montana State University - Computer Science • Virginia Tech - General Studies

ADDITIONAL

U.S. Citizen • Seattle resident; open to remote; able to travel for **SIT/UAT** and field support.