Samuel East

Video Software Engineer

About Me

For the past five years, I've had the privilege of collaborating with some of the world's most renowned media streaming platforms, including NBC, PeacockTV, Sky, NowTV, 3SS, Vodafone, OneTV, and ORS's simpliTV, driving innovation on highly technical projects with passion and dedication. With over 15 years of deep expertise in media streaming and development, I thrive in fast-paced, entrepreneurial environments. I'm energized by working with visionary professionals in dynamic teams, continuously pushing the boundaries of technology while expanding my skill set to make a meaningful impact in the ever-evolving world of media streaming.

I'm seeking opportunities to lead innovative media streaming projects and drive impactful results in a forward-thinking organization. I'm particularly excited about opportunities that allow me to collaborate across departments, streamline communication, and ensure successful project execution.

Skills

- Languages & Frameworks: JavaScript, TypeScript, Node.js, React, Angular, ElectronJS
- Player & Playback Technologies: Shaka Player, DashJS, HLS.js, Custom MSE players, CastLabs, Bitmovin
- DRM & Security: Widevine, PlayReady, FairPlay
- TV & STB Platforms: Samsung Tizen, LG WebOS, Hisense Vidaa, Custom Set-Top Boxes
- Cloud & Streaming Services (AWS): MediaLive, MediaPackage, MediaConvert, MediaTailor SSAI & Channel Assembly, MediaConnect
- Tools & Workflow: Git/GitLab, Jira, VS Code, Agile/Scrum, Sentry, Conviva analytics
- Analytics: Sentry, Conviva
- Development Methodologies: Agile

Certifications

- AWS Certified Cloud Practitioner
  AWS Certification Link

Experience

Company: 3SS.tv
Description:
I thoroughly enjoyed my time at 3SS; they were a privilege to work with. Starting the project and taking it to successful completion—building the entire streaming UI for a new STB for Vodafone—was incredibly rewarding. Overcoming challenges while working from the UK and syncing with the team in Budapest was a great experience. I developed a remote access suite using ZeroTier and Raspberry Pi, allowing real-time streaming and remote control of STB from the UK. This innovation enabled simultaneous work on DVB and OTT streams, improving team collaboration and remote development efficiency. This helped the project meet deadlines that would have otherwise been impossible to achieve.

The project was built using LightningJS for optimal speed on the low-end devices. In combination with the STB, I also applied my Tizen expertise to ensure the app worked on Smart TVs with minimal changes from the STB version. It was a new and exciting experience working in the DVB broadcasting field and using OIPF for playback, as well as switching between protocols using Shaka Player for OTT playback. We faced challenges with low-end devices when switching between DVB and OTT, but overcame them by using Shaka's unload method to free up resources and prevent crashes, ensuring smooth playback experience.

I quickly became the main developer responsible for the player, handling all player-related tickets, and building the UI to implement multiple playback types, including Live, StartOver, TimeShift, Catchup, VOD, and recordings. The streaming setup featured a 7-day rolling buffer, allowing customers to pause live TV, watch past content, and record live TV. I also implemented trickmodes that were restricted to users with certain capabilities, such as pause, play, rewind, fast-forward, etc.

Being part of a smaller team than I was at NBC allowed me to make decisions and be deeply involved in the project. I'm proud of what we've achieved and built, and it's been a truly fulfilling experience.

`Technical Skills and Experience at 3SS.tv`

- DVB Broadcasting & Shaka Player OTT
- KPI Management: Reduced zapping times and improved playback resilience.
- Manifest Manipulation: Expertise in subtitle/audio handling and parsing for optimal streaming.
- Player Resilience: Developed stall detection mechanisms and enhanced player builds for TV applications.
- Advanced Playback Features: Implemented trickmodes, live playback, and seamless switching between DVB and OTT.
- Remote Box Integration: Built a remote control solution using Raspberry Pi and ZeroTier networks.
- Tizen & CLI Development: Implemented Tizen solutions and CLI tools for playback functionalities.

- LightningJS Development: Developed UI features for live seeking, progress updates, metadata handling, etc.
- Custom STB Integration: Collected system-level metrics via JSON-RPC, improving monitoring.
- Debug UI Development: Built a custom debug UI for memory-related issues.
- WebSocket API for Log Management: Implemented a WebSocket API to send logs remotely.
- Shaka Player Statistics: Optimized start times and DRM license calls for improved performance.
- Audio & Subtitles Switching between OTT and DVB playback.

Experience

Company: NBC PeacockTV
Description:
At NBC PeacockTV, I contributed to groundbreaking initiatives across the NBC network, including PeacockTV, SkyShowTime, and NowTV. Our goal was to deliver a superior streaming service, prioritizing lightning-fast VST (Video Start Time), zero rebuffering, and seamless content delivery.

My responsibilities ranged from implementing BrightLine ads and mid-stream bitrate capping to conducting memory and CPU analysis to enhance the overall streaming experience. I worked across platforms, focusing on Web, Xfinity, and Samsung, and actively monitored KPIs, addressing issues on low-end devices such as Samsung 2017/2020 and Xi3/Xi6.

Daily, I leveraged the CVSDK in Typescript, managing pull requests and ensuring seamless CI integration through unit testing with Jest. I contributed to technical meetings, presentations, and documentation efforts to enhance team collaboration.

Technical Skills and Experience at NBC PeacockTV

- DASH, HLS, MSE & EME
- Updating & Maintaining the Reference App (React)
- KPI (VST, VSF) Monitoring & Bug Fixing (Conviva)
- Samsung TV Development (Tizen Studio)
- AAMP Development (X1 Xfinity Devices)
- Live Streaming (DVR, Live Edge)
- Feature Testing & Documentation
- Subtitles & Captions
- Shaka Bitrate Switching & Mid-Stream Bitrate Capping

Experience

Company: S3Bubble
This was my own company, where I built various media applications and projects, listed below.

Projects:

Media Encoding Desktop Application

Built with ElectronJS, this app encodes media to HLS & DASH in multiple bitrates with thumbnails and subtitles, and uploads it to AWS or stores it locally.
Key Features:

- Encryption to protect content
- Bulk uploads (folders or single files)
- Media trimming
- Various conversion tools (e.g., AWS Transcribe JSON to SRT, audio extraction)
- DASH & HLS
- Subtitles & Audio Tracks
- Thumbnails in Bif format

Technologies:

- NodeJS
- ElectronJS
- Javascript
- Ffmpeg (iOS, Windows)

Media Streaming Application with AngularJS and AWS Integration

Developed a web application using AngularJS, integrated with AWS to run media streaming workflows in the cloud.
Key Features:

- Cost-effective media streaming solutions
- AWS integration for efficient cloud workflows

Technologies:

- AngularJS
- AWS
- Javascript

AWS CloudFormation & Lambda Encoding Workflow Template

Built a CloudFormation template and Lambda function in NodeJS for encoding media to HLS/DASH via MediaConvert.
Key Features:

- Automated media encoding
- Lambda-triggered workflows

Technologies:

- AWS
- Lambda
- MediaConvert
- CloudFormation

AWS Production Live Streaming Workflow

Developed a live streaming workflow using AWS MediaLive and MediaPackage, integrated with OBS for ingesting streams and VideoJS for playback.
Key Features:

- Live streaming and VOD support
- OBS integration for media ingestion

Technologies:

- AWS MediaLive
- AWS MediaPackage
- VideoJS

Studio Approved DRM

Created a player using AWS SPEKE API for studio-approved DRM via third-party license servers (BuyDRM, EZDRM).
Key Features:

- Studio-approved DRM using Widevine, PlayReady, and FairPlay
- Secure video content streaming

Technologies:

- AWS
- MediaConvert

- Widevine
- PlayReady
- FairPlay
- VideoJS

VideoJS Waveform Plugin

Built a VideoJS plugin to visualize waveforms using canvas and Web Audio API, storing data as JSON with ElectronJS.
Key Features:

- Visual waveform generation
- Integration with Web Audio API

Technologies:

- NodeJS
- VideoJS
- Javascript

Education
Swansea Metropolitan University (2007 - 2009)
Degree in Interactive Digital Media
Awarded BA Hons 2:1

Swansea College, Tycoch, Swansea (2003 - 2005)
National Diploma in Music Technology
Awarded BTEC, Triple Grade Distinction, Merit, Merit

John Colet School, Wendover, Buckinghamshire (1994 – 1998)
9 GCSE passes (A-C) including English, Maths, and Sciences