ARTHUR LAMBERT

Senior Software Engineer

Embedded Software · Systems & Performance · On-Device Inference · Developer Tooling
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Founding engineer at Dreem (scaled from 5 to 70+ people, $57M raised) and first senior software hire at Soundskrit, both times building the software practice from scratch alongside the product: versioning, code review, CI, test and release process. Fourteen years of production C across firmware, real-time signal processing and the tooling around them, including running AI inference on embedded DSPs and NPUs. Joined three unrelated industries (network infrastructure, medical EEG, audio) with no prior domain knowledge, and delivered production software in each.

EXPERIENCE

Soundskrit
Apr 2022 to Present · 4 yrs 8 mos

MEMS acoustic sensing startup · ~$15M raised · ~30 people · Montréal, QC, Canada

Software Application Engineer, first senior software hire

- Set up the software engineering practice from scratch: versioned codebase, pull-request review, GitHub Actions CI, automated testing and configuration management.
- Built demo kits and proofs of concept used to win and sign new customers across a wide range of products: webcams, earbuds, conferencing speakerphones, standalone and shotgun microphones, AR glasses.
- Ported and optimized signal-processing algorithms, from linear and non-linear DSP to CNN/RNN models, onto Arm Cortex-A, Cortex-M and Cadence Tensilica HiFi DSPs, and delivered them as portable libraries to customers building on Ambarella, Novatek, Airoha, SigmaStar, Bestechnic, NXP, MediaTek and STMicroelectronics SoCs.
- Served as main technical contact for international customers, mostly in Asia and North America: requirements, milestones, delivery, documentation and post-delivery support.
- Diagnosed customer firmware and integration issues remotely from partial information: asking the right questions of their engineering teams, forming hypotheses and isolating the fault across algorithm, integration, hardware and measurement setup.
- Built internal tooling (Python/Flask, Docker, AWS S3) for CPU and memory benchmarking, output validation, regression testing, polar plots and industry metrics such as 3QUEST.
- Since early 2026, porting the company's CNN/RNN models to NPUs, with Arm Ethos-U55 as the main target so far, using PyTorch, TensorFlow, ONNX and Vela, with 8/16-bit quantization.

Dreem
Oct 2014 to Mar 2022 · 7 yrs 6 mos

Medical EEG wearables · $57M raised · 20+ patents · scaled from 5 to 70+ people · Paris, France

Head of Embedded Software
Jul 2019 to Mar 2022

- Led the embedded software team (3 engineers, 2 direct reports), owning specification, architecture, planning and technical roadmap against product requirements.
- Ran the team's Agile process: sprint planning, task allocation, and supervision of development, testing and deployment through to robust customer releases.
- Delivered the firmware for the CNES/CADMOS “DREAMS” experiment aboard the International Space Station (ESA mission Alpha, 2021), used by astronaut Thomas Pesquet to record his sleep in orbit.

Embedded Software Engineer
Oct 2014 to Jul 2019

- Joined as a founding engineer with no prior EEG or biosignal background and built the device firmware from concept to shipping product on NXP i.MX and Arm platforms (embedded Linux, Buildroot). This firmware shipped in the headband later cleared by the FDA under 510(k) K223539.
- Shipped three product generations from concept to production (one Kickstarter beta and two mass-production releases, about 20 to 30k units) and passed medical device certification.

- Owned the connectivity stack: BLE communication with the mobile app, Wi-Fi communication with the backend, and a remote firmware update system built on a dual-partition scheme.
- Developed the sensor acquisition layer (EEG, accelerometer and other onboard sensors) and the bone-conduction audio playback path.
- Integrated the CNN/RNN sleep-staging inference into the firmware within the device's real-time and memory constraints; the model itself was designed by the algorithm team.
- Worked daily with the mechanical, hardware, algorithm, backend and mobile teams.

EARLIER EXPERIENCE

Pace Oct 2013 to Oct 2014 · 1 yr 1 mo
Embedded Software Engineer (assignment for Lianeo), Paris
Set-top box platform: TR-069 management, RDK 2.0 integration, container-based security (LXC) and build system improvements.

Sagemcom Sep 2012 to Sep 2013 · 1 yr 1 mo
Embedded Software Engineer (assignment for Incka), Paris
Residential gateways on OpenWrt/Linux: fixed a kernel panic in the mesh fastpath, improved boot time and middleware performance, developed kernel-space IGMP fastpath features.

Thales Communications & Security Feb 2012 to Aug 2012
R&D Intern, Paris
Ad-hoc mesh networking: ported an L2.5 routing protocol to Arm boards and built a virtual mesh test platform.

Peerform Aug 2010 to Jan 2011 · 6 mos
Web Developer & Test Engineer (internship), New York
Early-stage peer-to-peer lending startup (fewer than 10 people): rebuilt an abandoned offshore web application in ASP.NET and set up a Selenium test platform.

TECHNICAL SKILLS

Languages: C (expert), Python, Bash, C++ (working knowledge)

Embedded & systems: embedded Linux, Buildroot, device drivers (SPI, I2C, GPIO), kernel-level debugging, root-cause analysis, remote field debugging, multi-threaded real-time architecture, OTA updates (dual-partition), BLE and Wi-Fi connectivity, sensor acquisition

Performance engineering: cross-platform porting, NEON/SIMD and DSP vectorization, cache and memory-layout tuning, CPU and memory profiling, power optimization, real-time signal processing (linear and non-linear algorithms, CNN/RNN models)

Edge AI / on-device inference: CNN/RNN inference on DSPs and NPUs, model porting and quantization (8/16-bit), PyTorch, TensorFlow, ONNX, Vela

Tooling & delivery: Git, GitHub Actions, CI/CD, Docker, AWS S3, Python/Flask dashboards, automated testing and benchmarking, code review, technical documentation, AI-assisted development

Platforms: Arm Cortex-A, Cortex-M and Ethos-U55, Cadence Tensilica HiFi DSPs, on SoCs from NXP, MediaTek, Ambarella, STMicroelectronics, Nordic and others

EDUCATION & LANGUAGES

M.Eng. Computer Engineering, specialization in embedded systems and real-time computing · EPITA, Paris 2012
DUT Computer Science, software engineering · Lannion, France 2008

Spoken languages: French and English (bilingual, professional working proficiency in both), Spanish (basic)