George Ostrobrod

Lead Software Engineer

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Summary

Lead Software Engineer with 15+ years building GPU-accelerated image processing, computer vision, and graphics products across iOS, Android, web, and desktop. I deliver cross-platform C++/Swift/Kotlin systems, production ML-assisted imaging pipelines, and high-performance rendering engines. I also lead distributed teams through architecture, delivery, and mentoring.

Key Skills

- **Software Architecture:** cross-platform architectures and APIs, cloud systems (AWS), optimization, requirements analysis.
- **Research & Development:** image processing, computational geometry, video and audio processing, machine learning, 2D/3D/XR.
- **Mentorship & Education:** mentoring engineers, technical documentation, internal training, conference speaking.
- **Project Leadership:** Agile methodologies (Scrum, Kanban, Lean, XP), SDLC ownership, code review, CI/CD, R&D process design.
- **Platforms:** Windows, iOS, Android, macOS, Ubuntu, visionOS.

Technical Skills

- **Programming Languages:** C#, C, C++, Objective-C, Swift, Kotlin, Python, SQL.
- **Markup Languages:** Markdown, LaTeX, HTML, XML.
- **Tools:** Unity, Xcode, Visual Studio, Android Studio, Qt, Docker.
- **Data and Backend:** PySpark, Flask, Grafana.
- **GPU Frameworks:** OpenGL (ES, WebGL), Metal, OpenCL.
- **Math and ML:** OpenCV, Eigen, TensorFlow, Keras, NumPy, SciPy, libigl.
- **UI Frameworks:** UIKit, SwiftUI, Qt, Jetpack Compose, RealityKit, ARKit.
- **Multiplatform:** WebAssembly, Node.js plugins, JNI.

Employment Overview

- Software Engineer, gostrobrod.dev (Casual, February 2026 - Present)

- VR Software Engineer, JigSpace (Full-time, October 2024 - Present)
- Lead Software Engineer, Co-Founder, Latook Software (Self-employed, August 2021 - April 2026)
- Senior Consultant, Mobile Developer, Thoughtworks (Full-time, 2022 - 2024)
- Senior Software Engineer, Procreate (Full-time, June 2019 - June 2022)
- Lead Software Engineer, CVisionLab LLC (Full-time, 2012 - 2019)
- Methodologist, EducationRobots (Contract, 2018 - 2019)
- Software Engineer, Dimeco (Contract, 2018)
- Software Engineer, TechnoStandard LLC (Contract, 2010, 2013)
- QA Engineer / Software Engineer, CBOSS (Part-time, 2010 - 2012)
- Software Developer, CDP TTI SFedU (Part-time, 2008 - 2010)

Employment and Project Details

Software Engineer

> gostrobrod.dev | Casual | February 2026 - Present

- Operating as an independent software engineer.
- Bringing 12+ years of hands-on experience in image and video editing systems, computer graphics, and GPU-accelerated processing across mobile, web, and desktop.
- Designing and building custom image/video editing and computer graphics solutions for clients, while developing and shipping original apps under my own practice.

Selected projects:

- **Orcalot**
  - Implemented a convenient adoptation of Orca sequencer and Pilot synthesizer.
- **Phyarum**
  - Implemented a GPU-optimized multi agent simulation of physarum polycephalum slime mold.
- **Pixator**
  - Designed product architecture and user workflows for a pixel-art experimentation tool.
  - Implemented palette extraction algorithms and core feature logic.
- **Tiamat**
  - Created a SwiftUI sandbox that became an onboarding and process-refinement tool for the team.
- **Quantum**
  - Implemented a GPU-optimized particle simulation demo from concept to shipped app.

Technical stack: C, C++, Objective-C, Swift, Kotlin, Python, SwiftUI, Metal, OpenGL, JNI, OpenCV, WebAssembly.

VR Software Engineer

> JigSpace | Full-time | October 2024 - Present

- Maintain and extend the production iOS/visionOS codebase.
- Implement new Vision Pro features using SwiftUI, RealityKit, and ARKit.
- Build prototypes and product demos for Apple Vision Pro, PICO and Meta Quest headsets.

Technical stack: Swift, SwiftUI, Metal, RealityKit, ARKit, Blender, Unity.

Lead Software Engineer, Co-Founder

> Latook Software | Self-employed | August 2021 - April 2026

- Lead a distributed engineering team delivering image processing solutions across iOS, Android, web, and desktop.
- Design and implement GPU/CPU algorithms in computer vision and image processing.
- Define architecture and delivery strategy from discovery to production.
- Established Agile delivery workflows and CI/CD practices.

Technical stack: C, C++, Objective-C, Swift, Kotlin, Python, SwiftUI, Metal, OpenGL, JNI, OpenCV, SQL, Grafana, Docker, WebAssembly, AWS, Unity.

Achievements:

- Built delivery processes for a fully remote global team.
- Built and mentored a QA function and project management capability for contractor-heavy delivery.

Selected projects:

- **Captions** (App Store, Google Play)
    - Built a shared rendering and layout engine to keep caption visuals and animation behavior consistent across platforms.
    - Delivered smooth 120 FPS caption animation using GPU-based rendering and image processing.
    - Migrated a shared mobile core to web via WebAssembly and to desktop for backend processing workloads.
- **FaceAI**
    - Built an iOS imaging framework for retouching, geometric transforms, and ML-powered face editing.
    - Led architecture and implementation of high-cost image manipulation modules.

Senior Consultant, Mobile Developer

> Thoughtworks | Full-time | 2022 - 2024

- Designed and implemented mobile architectures for client engagements.
- Integrated observability tooling (New Relic) and supported AWS/CI/CD migration work.
- Improved development workflows and mentored team members on maintainable, testable code.

Technical stack: Swift, TypeScript, Kotlin, C#, Xamarin, React Native, SwiftUI, SQL, AWS, Terraform, GitHub Actions.

Selected project:

- **Digital Birth Certificate Platform**
  - Improved Android navigation stability and long-term maintainability.
  - Refactored Kotlin modules and resolved SwiftUI delivery blockers for iOS.
  - Partnered with design and product teams to deliver features iteratively.

Senior Software Engineer

> Procreate | Full-time | June 2019 - June 2022

- Led R&D initiatives across image processing, computational geometry, audio visualization, and video effects.
- Replaced a 1,500-line heuristic implementation with a 100-line mathematical approach, improving testability and reducing defects.
- Introduced structured R&D processes and knowledge-sharing practices.
- Implemented a Metal-based rendering engine for UI workflows.

Technical stack: Python, Objective-C, C, C++, Swift, SwiftUI, UIKit, Metal, Accelerate, CoreGraphics, Eigen, libigl.

Selected projects:

- **Procreate:** Drove R&D for image effects, texture stitching, color adjustment, and rendering post-processing.
- **Procreate Dreams:** Built algorithms for audio visualization, smart thumbnails, and video effects.

Lead Software Engineer

> CVisionLab LLC | Full-time | 2012 - 2019

- Led research and delivery of image-processing frameworks for medical and creative applications.
- Reduced delivery time for a key feature from 6 months to 1 month through systematic refactoring and unit testing.

- Developed multiplatform medical imaging libraries that reduced processing time from weeks to seconds.

Technical stack: Python, C, C++, Objective-C, Swift, Cocoa, UIKit, OpenGL ES 2/3, OpenGL 3/4, Metal, Accelerate, CoreGraphics, Qt, TensorFlow, Keras, OpenCV, OpenCL, DICOM, libigl, Eigen, NumPy, SciPy, Unity.

Selected projects:

- **CBCT Data Analysis Framework:** Architected and built a library suite for CT analysis, including preprocessing, ML integration, and 3D reconstruction tooling.
- **Pixelmator:** Built multiplatform painting engine components and advanced image retouching/effect algorithms.
- **PicsArt:** Developed advanced image effect algorithms.
- **Face detection on Adapteva Epiphany:** Adapted and benchmarked face detection for a constrained multicore platform.

Publication:

- **Efficient face detection on Epiphany multicore processor**, Bulletin of the South Ural State University Series "Computational Mathematics and Software Engineering" (2014).
- Authors: Ostrobrod Georgy, Sukhinov Anton.
- Result: 16-core Epiphany achieved 2.5x performance vs a single-core CPU at the same clock while consuming 0.5W.

Additional Experience

- **Methodologist (Contract), EducationRobots (2018 - 2019):** Designed robotics curriculum and produced training materials across electronics, programming, and project work.
  Technical stack: Python, C++, Arduino, OpenCV, Autodesk Inventor.
- **Software Engineer (Contract), Dimeco (2018):** Built a face-matching service for remote health examinations to reduce counterfeit risk.
  Technical stack: Docker, Python, OpenCV, Keras, dlib.
- **Software Engineer (Contract), TechnoStandard LLC (2010, 2013):** Built interactive training products for nuclear and chemical industry staff.
  Technical stack: Adobe Flash, Adobe Flex, ActionScript 3, Unity.
- **QA Engineer / Software Developer, CBOSS (2010 - 2012):** Created test plans and reports; resolved defects identified through QA workflows.
  Technical stack: C++, SQL.
- **Computer Science Lecturer, HS28 and HS4 (2008, 2010):** Designed curriculum, delivered lectures, and assessed student progress.
- **Software Developer, CDP TTI SFedU (2008 - 2010):** Built interactive illustrations for remote math and physics education.
  Technical stack: Adobe Flash, ActionScript 2.

Education

Specialist, Information Security (equivalent to a Master's in Computer Science & Communications)

> Southern Federal University | 2007 - 2013

Thesis: "R&D Noise-Proof Coding Algorithm Based on Fibonacci Sequence".

Additional Coursework

- Social Media Marketing (2020), Coursera - Northwestern University
- Statistical Shape Modelling: Computing the Human Anatomy (2018), FutureLearn - University of Basel
- Machine Learning (2016), Coursera - Stanford Online