

Stan Serebriakov

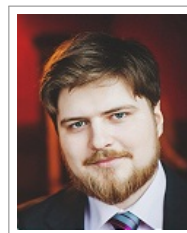
Software Engineer

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cfr.pw, [github](https://github.com)



Education

- 2010–2012 **PhD Student in Applied Math**, *St. Petersburg Polytechnic University*.
Monocular 3D Tracking
- 2004–2010 **MSc in Robotics**, *St. Petersburg Polytechnic University*.
Simultaneous Localization and Mapping with a Time-of-Flight Camera

Experience

- 2024–2026 **C++ Engineer**, *MPK Soft*, St. Petersburg.
- Designed and implemented a data-processing server and client SDK.
 - Implemented LoRa chirp recognition and frequency-hopping table estimation.
 - Engineered an embedded system for aerial object surveillance combining Hessian blob detection, MOSSE tracking, and dynamic exposure control.
- Stack: C++20, Qt, Boost, FlatBuffers, FFTW, OpenCV.
- 2021–2023 **iOS Engineer**, *Constanta*, Moscow.
- Implemented core features and frameworks, refactored legacy code, and reviewed merge requests for a leading sports analytics [app](#).
 - Migrated an Objective-C AR prototype to a published Swift [app](#).
- Stack: Swift, Objective-C, C++, VIPER, Core ML.
- 2015–2021 **Lead iOS Engineer**, *Luxoft*, St. Petersburg.
- Delivered multiple iOS applications for clients and conducted hundreds of technical interviews worldwide. Selected projects:
- **iStockTrack**: A stock market data browser [app](#) supporting voice and text messaging for communication with market advisors.
 - **Citibank**: A private banking app based on Apache Cordova.
 - **Gazprom Neft**: A [refueling app](#).
 - **Gosuslugi**: [Citizen feedback](#) and case-handler apps.
- Stack: Swift, Objective-C, OpenGL, MVVM, Lottie.
- 2015–2015 **iOS Engineer**, *GuessMe*, St. Petersburg.
- Developed a social networking iOS app that lets users create interactive posts and share them with relevant contacts. Key contributions included:
- Developed a Swift JSON mapper [generator](#).
 - Implemented core iOS system features (networking, data management, etc.).
- Stack: Swift, Objective-C, Haskell, SQLite.

- 2014–2014 **Lead R&D Engineer**, *x-Turion*, St. Petersburg.
Led software development for a compact home robot equipped with a surveillance camera for remote audio and video monitoring of private premises. Key device features included autonomous navigation, object and face recognition, and mobile app control. Stack: C++, ROS, OpenCV.
- 2012–2014 **Mobile Engineer**, *i-Free*, St. Petersburg.
Developed multiple iOS and Android apps, including:
◦ A museum events browser with ticket booking capabilities.
◦ A natural language voice assistant for internet search queries.
Stack: Objective-C, C++, Java, OpenGL.
- 2009–2011 **Lead Engineer, Co-founder**, *Cybrox*, St. Petersburg.
Led the development of 3D IR-based head trackers and conducted research on webcam-based 6D head tracking.
◦ Implemented an OpenCV-based prototype and ported it to C for execution on a Blackfin DSP.
◦ Co-authored the business plan and patent applications.
Stack: C, OpenCV, OpenGL.
- 2009–2010 **Research Assistant**, *Jacobs University*, Bremen.
PreCombine3D project: 3D tracking driven by a PMD time-of-flight camera. Implemented calibration and motion estimation software, as well as a camera Ethernet driver. Co-authored a research paper.

Skills

- Languages C++, C, GLSL, Swift, Objective-C, Haskell. Familiar with Go, Java, Python
Expertise 3D Graphics, Unix/Linux, iOS Development, DSP, Computer Vision, $\text{\LaTeX}$

Personal Projects

- Raytracer A CPU raytracer implemented in modern C++. Features include Blinn-Phong shading, shadows, bounding volume hierarchies, and path tracing.
github.com/cfr/raytracer.

Master's Thesis

- Abstract The thesis describes a real-time visual navigation system using a time-of-flight camera without *a priori* knowledge of the scene. A method for fusing data from time-of-flight and optical cameras is presented, along with methods for increasing localization robustness by leveraging color and spatial information.

Talks and Publications

- Arrows and Functional Reactive Programming, SPb Haskell User Group
- Introduction to Computer Vision, Chaos Constructions 2009
- A. Nüchter, S. Serebriakov, L. Stankevich: "Visual SLAM with a Time-of-Flight Camera", Journal of Optical Technology, 2010