

Tomas Mikalauskas

London

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PROFILE:

Github - <https://github.com/tomasgdc>

LinkedIn - uk.linkedin.com/in/TomasMikalauskas

Innovative and results-driven Senior Software Engineer with experience in real-time systems, graphics programming, and production-oriented R&D. Experienced in delivering robust, high-performance solutions within tight deadlines and collaborating across teams to drive impactful outcomes. Passionate about emerging technologies, continuous optimization, and leading initiatives that balance cutting-edge research with practical production needs.

SKILLS:

- **Languages:** C/C++, Python, Go
- **Engines:** Unreal Engine 4 & 5
- **Tools:** Docker, Terraform, AWS, Kubernetes
- **Platforms:** Linux, Windows, PS4, PS5
- **Graphics:** Vulkan API

EXPERIENCE:

Sony Interactive Entertainment - London

Senior Software Engineer (P4)

September 2023 - Current.

Contributed to development of custom C++ Client application and tools for real time data capture and video streaming on PC(Windows,Linux)/PS5 for ML projects. The tools abstract the OS and Graphics API (Vulkan/Agc). Some of the work highlights:

- Converted **CRAFT** (text detection) and **CRNN** (text recognition) models from **PyTorch** to **ONNX** format and reimplemented the **EasyOCR** pre, post process and inference pipeline in C++ using **ONNX** Runtime for high-performance, real-time text recognition.
- Implemented GPU-based H.264 encoding and decoding using Vulkan API to minimize system latency.

Collaborated with R&D and the Artist to develop Unreal Engine based tech demos, showcased at Sony events such as SETS and STEF

Created Unreal Engine based plugins for R&D:

- An ML inference plugin for running models and displaying results during gameplay in the UI, utilising a custom **ONNX** inference library.
- Custom data capture tools for **Neural Shadow Mapping** (based on a 2022 paper) to record the required G-buffers for training data. Implemented the rasterized image capture, while my tech lead handled the ray-traced ground truth shadows.

Conducted technical interviews for engineering candidates, contributing to team growth and hiring decisions.

Technologies used: C\C++, Golang, Python, ONNX, Vulkan API, AWS, Docker, Kubernetes, Terraform, Unreal Engine 5, PS5

[Here \(formerly OpenFin\)](#) - London

Chromium C++ Developer

June 2023 - Aug 2023

Resolved several issues in the official Electron framework.

Technologies used: Chromium • C++ • GTest • Electron • Javascript

[AtkinsRealis](#) - London

Senior C++ Contractor

February 2023 - April 2023 (Contract)

Contributed to the development of a large-scale public consultation application in collaboration with the artists.

- Developed a tree clustering algorithm to populate trees over a large terrain environment using longitude and latitude data, ensuring accurate scaling.
- Implemented location based query on a given point in the game world using ArcGIS API.
- Designed camera behaviours for seamless top-down and ground level views on touch interfaces.

Technologies used: Unreal Engine 5 • ArcGis Products • C++

[Disguise](#) - London

Senior Software Engineer

June 2022 - February 2023

Was part of the core team working on in-house d3 C++ engine that is used for live events and virtual production.

- Improved performance by implementing a memory pool in the code hot paths.
- Utilised tools such as **Intel VTune**, **Superliminal** and **RenderDoc** to identify and resolve performance, graphics related bottlenecks

Technologies used: Wireshark • RenderDoc • Tortoise • Mercurial • Rsync • C/C++ • Python

Sony Interactive Entertainment - London

Client Engineer

May 2019 - 2022 May

Was involved in the [IDU](#)(Interactive Display Unit) PS5 project since its inception, contributing to the UE4-based application over three years. Key contributions include:

- Designed the initial kiosk client prototype in **Unreal Engine 4** and played a significant role in the application architecture.
- Developed an **NFC-based control system**, enabling user interaction via smartphones over **WebSocket**, utilizing an **embedded Mongoose server** in **C** and the Linux NXP NFC driver (PN7150, PN7120).
- Engaged in various research projects under NDA, contributing to innovative solutions and enhancements.

Technologies used: gRPC • REST APIs • Websockets • Unreal Engine 4 • C/C++ • PS5

Sony Interactive Entertainment - London

Advanced Engineer

March 2018 - May 2019

Worked on the PS4 version of the [Playstation Vue](#) video streaming engine.

- Was responsible for implementing **hls.js video stream seeking and rewind** functionality in the PS4 C++ engine that allowed calling this functionality via Javascript.
- Various bug fixes and looking into submitted application crash data.

Technologies used: C/C++, Hls.js, PS4, Javascript

Smartpipe Solutions - Cwmbran

C++ Software Engineer

JULY 2017- Feb 2018

Worked on GDPR compliant real time SaaS service that allows mobile network operators to monetise mobile data.

- Added logging functionality on linux server handling more than million requests.
- Diagnosed and resolved server crashes using system logs and GDB.

Technologies used: C/C++, Boost Asio, Linux, Redis, Ngnix

Sapiens: Insurance Software Solutions - Cardiff

Backend Software Developer

JANUARY 2016- JUNE 2017

- Contributed to the implementation of a new payroll system based on defined business requirements, working closely with a senior engineer as part of a two-person development team
- Led backend performance optimization for financial batch jobs, ensuring each job met strict customer performance benchmarks while processing over one million records.

Technologies used: C++, Windows, SQL

CERTIFICATIONS

[**Mathematics for Machine Learning: Linear Algebra**](#)

Imperial College London

March 2025

[**Programming with Google Go Specialization**](#)

University of California, Irvine

October 2024

EDUCATION

2014-2015 Aberystwyth University

Computer graphics, vision and games - Certificate of higher education
