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.

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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

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