Filip Mašić

DoB: 16/02/1995
Nationality: British

fmasic2@gmail.com
07505 919 965
Hammersmith, London, UK

I'm a programmer with a maths background whose depth of analysis and diligence give him a standout record for reliable and maintainable software, equally across personal and professional work.
See https://pyorot.netlify.app for in-depth blogs/Q&As about my projects and myself.

Education History

Churchill College, University of Cambridge 2013–2016

BA Mathematics: 2.1. Pure maths specialism, mainly functional analysis, also graph theory, probability, abstract algebra, computation, formal languages. Coding coursework on finding permutation/Galois groups, colouring graphs, factorisation, statistics (all Python), solving DEs (MATLAB).

Latymer Upper School 2006–2013

A-Levels: 3A* (Maths, Further Maths, Physics), 1A (Economics) 2011–2013
GCSEs: 10A*, 1A (+ FSMQ Additional Maths: A) 2009–2011

MIT Distributed Systems Coursework (Go) 2018

I implemented the Raft consensus algorithm from scratch, learning distsys theory via practice. The result was very reliable, passing each test MIT provided at least 99% of the time (sample of 200).

Employment History

Junior Analyst, MNV Capital (C++, Python) Oct 2018 – Oct 2019

General software work for a 6-person hedge-fund, mostly making trading platforms fast and reliable.

Market-Making Bot (C++): an always-up bot running a trading strategy for Bitcoin futures where low latency is the primary goal. Has aspects of async and predicting the future fundamentally built into the design. Entirely my own work despite being for the company. Made and run on Linux.

Latency Optimisations (C++): I took the existing codebase of an HFT algorithm and optimised it, particularly regarding concurrency (e.g. ring buffers for queues), allocations, and CPU optimisations regarding stack, branching, cache/prefetch.

Personal Work History

Alert Bot for Pokémon Go (JavaScript): an always-up bot that converts a data source into alerts for changes. Was used by over 1000 people, in the form of public Discord channels and (thanks to a collaborator) a free private service. Perfect reliability was the primary concern. I also ran it as a client-facing service, talking to local community leaders about their own curated channels.

Romhack of a Zelda Game (Gecko/PowerPC ASM): I wrote a practice mod of Skyward Sword, whose core function is position/story-progression store/reload. Very exploratory reverse engineering work using a debugger, memory editor and static analysis (Ghidra, primarily the decompiler).

Misc: I designed and coded the automated leaderboard spreadsheet at https://tiny.cc/smsils (JavaScript), which also has a reach of 100s of people. I made an alert bot posting Twitch streams to Discord (Go).

Skills

Golang, C++, Python, JavaScript (all competent); Google Cloud Platform, Heroku; CMake, Node.js, Pandas; Bash; Google Apps Script. Very good at Excel. *Currently learning Rust/WASM/React.js to make a new GUI program to measure durations between frames of video.*