

# KIRAN OSTROLENK, PhD

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Location: Manchester, UK

SENIOR SOFTWARE ENGINEER

[Linkedin](#) [Portfolio](#)

## SUMMARY:

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Passionate engineer with experience in distributed and systems programming and team leadership. I take pride in building reliable software and enjoy contributing to FOSS in my spare time. I particularly enjoy working in Rust and adhering to best engineering practice (continuous testing, reproducible builds, etc...).

My PhD in Physics required the translation of complex mathematics into efficient computer algorithms for the simulation of particle collisions. I developed strong skills:

- rapidly learning new and difficult concepts;
- communication of complex topics to experts and non-experts;
- working productively in large, often remote, collaborative projects.

I have advanced expertise in Rust, Nix, Git, GitLab CI, Docker, Linux and Python. I am intermediate in C and C++.

In my spare time I enjoy playing the guitar, trying to learn Italian (mostly in vain) and drinking copious amounts of tea.

## EDUCATION:

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### PhD Theoretical Particle Physics

University of Manchester, 2016-2020

Improved the mathematical accuracy and efficiency of two particle collision simulators: [MadGraph](#) and [Herwig](#) - large C++ projects.

- Accelerated some MadGraph calculations by 50% by re-modelling them as DAGs. [arXiv:2102.00773](#)
- Evaluated two competing mathematical algorithms within Herwig. Determined why they disagreed and which was more accurate.

### MPhys Physics with Philosophy, First

University of Manchester, 2012-2016

Philosophy developed my critical thinking skills and the ability to solve abstract problems.

## EXPERIENCE:

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### Senior Software Engineer

Codethink, 2020 to now

- Advised and delivered for clients in a broad range of domains - from low level / embedded applications to CI/CD pipelines. Focussed on safe, reproducible and (where applicable) open solutions.
- Engineered and led several Rust-based client projects. Most recently, delivered a performance-critical distributed system. Used async to meet performance requirements and carefully handled cancel/shutdown safety to ensure reliability.
- Team leadership, interfacing with clients, facilitating decisions and reporting progress. Mentoring junior members, resolving day-to-day issues and working with PM to ensure work packages deliver on time.

## WORK IN THE OPEN:

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### Rust CI for Gitlab

<https://gitlab.com/rust-ci/rust-ci>

Co-creator and lead maintainer. Provides a generic, configurable CI pipeline for use in any Rust GitLab project. Features include linting, testing and doc deployment.

### Lorry

<https://gitlab.com/CodethinkLabs/lorry/lorry2>

Worked as lead maintainer of Lorry, a software mirroring service written in Rust. I have implemented features and fixes, and improved testing and CI - see [here](#) for the full list.

### Upstream contributions

- Rust: [Add async API](#) to HepMC2 crate. Avoids code duplication of sync implementation using [maybe-async](#).
- Rust: [Add multi-format support](#) to DurationString library.
- C: [Contributed](#) towards support for the RISC-V Vector Cryptography extension in QEMU.
- Nix: Various package additions and fixes to existing packages in [nixpkgs](#) and [home-manager](#).

## CERTIFICATES:

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- 2022-09-14 LPIC-1 [Linux Professional Institute](#)
- 2022-06-09 Cyber Security Practitioner [Exido](#)