



Software Engineer (Simulation & Frameworks)

Job Specification

About Optalysys

Optalysys is a pioneering deep-tech company developing new ways to power the future of computing. By harnessing light, we are creating advanced photonic technologies that help the world's most demanding systems run faster and more efficiently. Our work supports breakthroughs in areas such as artificial intelligence and computing infrastructure. At Optalysys, we're bringing together talented people who are passionate about building technology that expands what computing – and humanity – can achieve

We are committed to building a home for exceptional talent.



About the Role

Role: Software Engineer (Simulation & Framework)

Department: Architecture

Location: UK - Remote, with willingness to travel to any UK or US Optalysys hubs

Employment Type: Permanent, Full-Time

Level: Senior / Principal

The role is within Optalysys' newly formed Architecture group which is tasked with architecting a novel photonics computing system for various target markets, such as AI and Fully Homomorphic Encryption (FHE).

As a Software Engineer working on an in-house simulation system and accompanying frameworks, you will be critical in helping develop the architecture. You will work across the software-hardware boundary, enabling rapid bring-up, deep system insight of a novel compute architecture

Key Responsibilities

You will be working alongside other engineers to develop a full system simulation environment. The major tasks will be:

- Hands-on development responsible for the in-house simulation environment of the photonics system
- Build methods of extracting metrics, such as latency, hot-spots, utilisation etc.
- Work with other tools developers to ensure smooth interaction through the whole toolchain so that real world applications can be executed on the simulator
- Integration of the simulator with higher level frameworks such as PyTorch, ONNX Runtime and HEIR
- Documenting and writing code to help with pre-tapeout verification
- Mentoring less experienced engineers
- Helping in system bring-up
- Defining and requirements capture for mission mode software
- Defining, tracking and reporting engineering metrics to demonstrate progress towards completion
- On time delivery of the design against agreed metrics and sign-off



Required Experience & Skills

We are looking for somebody with a strong background in C/C++ and Python. You will need to be collaborative, an excellent communicator and able to work in a fast-changing environment. You will have:

- 10+ years of Python or C/C++
- Knowledge of the python based event simulators, e.g. SimPy
- Strong knowledge of SoC architectures and memory architectures
- Experience in using various testing frameworks
- Experience in writing specifications, test plans and reports
- The ability to communicate clearly with both expert and non-expert audiences

Preferred / Additional Experience

- Familiar with AI/ML, HPC or Cryptography
- Knowledge of Rust
- Knowledge of using JIRA
- Knowledge of Jenkins
- Knowledge of performance analysis
- Knowledge of CI/CD pipelines
- Knowledge of GIT

Benefits

We offer competitive compensation. The base salary range for this role determined based on location, experience, educational background, and market data.

Salary Range: total compensation goes beyond base salary, it also includes comprehensive health care plan, Pension matching program, generous time off, annual performance-based bonus, and other rewards that recognise your impact and contribution.

Benefits eligibility may vary depending on your employment status and location. Optalysys recruits, employs, trains, compensates, and promotes regardless of race, religion, color, national origin, sex, disability, age, veteran status, and other protected status as required by applicable law.

How to apply

Please send a copy of your CV to recruitment@optalysys.com with a cover letter