

BIRAT KOIRALA

Software Engineer || Computer Science || Full Stack

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EXPERIENCE

Amazon (Selection Contribution Platform)

Software Development Engineer

August 2025 - Now London, UK

- Designed and implemented end-to-end token-based authorization across distributed microservices, enabling secure third-party seller operations at scale.
- Built partial batch retry mechanism for large-scale data processing pipelines, reducing operational intervention rate by 50%.
- Implemented S3 validation layer for workflow submissions, catching a critical bug affecting 10% of all clients.
- Migrated legacy CloudFormation infrastructure to AWS CDK, improving maintainability and enabling isolated developer environments for faster iteration.

AWS (Network Availability)

Software Development Engineer

September 2024 - August 2025 Dublin, Ireland

- Architected and built a org-wide network monitoring tool from scratch, featuring interactive heatmaps, time series visualizations, and real-time data caching and storage, handling global network metric emissions of a minimum of 150k TPS. This tool was used by more than 1000 internal network engineers, day to day.
- Led complex filtering initiatives and sensitivity analysis to improve location detection of traffic impaired regions by up to 70%.
- Designed and implemented the UI authorization flow in React for an AWS Cloudwatch service called Network Flow Monitor.

Amazon (Benefits Team)

Software Engineering Intern

July 2023 - September 2023 Dublin, Ireland

- Designed and developed a high quality UI design tool in React that improved developer workflow by 80% for a large-scale code generation engine.
- Led initial proof of concept phases and ensured smooth transition to internal team for full production development based on successful prototype.
- Bootstrapped and hosted scalable infrastructure on AWS services like Route 53, Lambda, API Gateway and S3 using aws-cdk. Led transition for wider team adoption and growth.

Fundapps

Software Engineering Intern

July 2022 - September 2022 London, UK

- Reduce graph data load and rendering times from 800ms to 164ms
- Spearheaded the migration of a 10 year old monolithic .NET project to a standalone React service, accelerating development and enabling modern infrastructure implementation.
- Enforced strict client side testing, automated integration and visual regression testing to increase security, quality and robustness.

EDUCATION

B.Sc. Computer Science

University of Leeds

2021 - 2024

1st class degree classification.

International Baccalaureate

Dartford Grammar School

2019 - 2021

PROJECTS

Canopy Nepal - SEO implemented website for charity organisation using PayPal and Sendgrid Mail API, available on canopynepal.org.

Studypal - Full stack flashcard application that uses input (text, pdf, pptx and docx) and generates them into flashcards using OpenAI API. Deployed on AWS. Built with React and FastAPI.

Reader - Fullstack self hosted book platform. Streaming server implemented in Golang, to ensure increase in network performance. Metadata server implemented in Golang, for increased reliability of latest data.

Connect4 ML - Connect4 application with bot that uses ML to play connect4 with chosen variable difficulty.

Portfolio Site - Personal portfolio & blog site built with NextJS, available on birat.info

TECHNICAL SKILLS

Typescript

Python

Go

JavaScript

SQL

Java

C

C++

React

NextJS

REST API

GraphQL

FastAPI

SQLite

PostgreSQL

MongoDB

NoSQL

Git

Docker

Maven

Agile

AWS

AWS Lambda

AWS ECS