Rahul Ramaka

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Portfolio^New!: `https://muffpy.github.io/`

Education

2019-22 **Department of Informatics, King's College London**
BSc Hons., Computer Science, *First-Class Honours.*
Springer Nature Prize (distinguished performance in second year studies.)

2016-18 **DPS International School Singapore**
Highest score in academic year: A Level (A* A* A* A*) and AS Level (AAAA).
Gold Scholar Badge and Excellence Scholarship (S$6500).

Experience

2023-24 **Independent Consulting & Professional Skill Development**
- Strategic break from corporate desk roles to focus on personal development.
- Gained expertise in exercise and nutritional sciences through self-study and application, aiming to optimize cognitive performance and work-life balance.
- Leveraged newfound skillset to launch an independent fitness consulting service and acquired client base through referrals and social media marketing.

2023-23 **PLSV Group, Computer Laboratory, University of Cambridge**
Research Intern
- Worked on the DIADEM project supported by EPSRC, Arm and Pernosco.
- Experimented in creating embeddable tools for the LLVM compiler stack to improve coverage for compiler-generated debugging metadata.

2022-22 **Amazon Web Services (AWS), Amazon**
SDE Intern
- Project CommonArchs: identify and prioritise support for common application operational patterns in AWS.
- Designed and implemented ML model to cluster customer Cloudformation graphs and hosted using SageMaker, Glue, OpenSearch.

2021-22 **Department of Informatics, NMES, King's College London**
Teaching Associate: C++ programming (2021) and Operating Systems (2022)
- Head TA for the Operating Systems (2022) module.
- Tutored students in OS development, C/C++ programming and Unix.

2021-21 **Video Quality Analysis, Prime Video & Amazon Studios**
SDE Intern
- Project VQA Multiviewer: reduce reliance on third-party-owned streaming software by Live Operations, decreasing the division's overhead.
- Created a live stream player with real-time notifications of A/V defects detected using CV models trained on captured content and synthetic media.
- Contributed to the AWS Elemental Media Content Distribution stack including MediaConnect, MediaStore and Kinesis.

2020-20 **Mobile Messaging, Snapchat Engineering**
Software Engineer Intern
- Worked on cross-platform mobile messaging across Android and iOS.
- Contributed to the cross-language interface (Djinni) between the platform-specific presentation code and the backend C++ libraries.

Projects

libdeep a PyTorch-like deep learning library in C++/Python

lightdb a lightweight disk-oriented relational database in C++

netstackxx rewriting the Linux networking protocol stack in C++

mrgo a MapReduce implementation in Golang

common-archs clustering AWS Cloudformation graphs

liballocsgc a semi-precise C/C++ garbage collector extension for liballocs

funlang an LLVM backed FUN language compiler in Scala

Core Skills

Client communication
Effectively convey technical ideas to non-technical audiences and practise active listening to meet client needs.

Continuous learning
Proactively study and apply new knowledge across disciplines, adapting quickly to emerging technologies and methodologies.

Efficiency Management
Implement data-driven strategies and time management techniques to enhance personal and team efficiency.

Analytical Problem-solving
Apply analytical thinking and logical reasoning to break down complex challenges into manageable components.

Technical Skills

Artificial intelligence: deep learning, large language models, and natural language processing using generative transformers (GenAI).

Programming paradigms: object-oriented (Java, Python, C++), message-passing (Rust, Go), functional (Scala, Scheme, Haskell), and logic (Prolog, Agda).

Database systems: MySQL, PostgreSQL, MongoDB, Elasticsearch, inverted indexes.

Operating system level software: syscalls, signals, pipes, mmap, locks, monitors, schedulers, page tables, caching, filesystems, containers (Docker, k8s), hypervisors, distributed computing (gRPC, Key-Value stores, AFS, P2P, Blockchain).

Networking: socket programming, TCP/IP programming, network adaptors and interfaces.

Web programming: Wasm, JavaScript, TypeScript, Django, Flask, React and Bootstrap.

AWS: SageMaker, EC2, Lambda, S3, EFS, DynamoDB, OpenSearch, Glue, StepFunctions, CloudWatch, ElementalMedia, Kinesis, CloudFront, Route53, KMS, IAM

Referees

Click on names to get contact details.

Dr Stephen Kell, Lecturer in Computer Science, King's College London
Prof. Laurence Tratt, Professor of Software Development, King's College London
Oswaldo Hernandez, Software Development Manager, Amazon Web Services