

Rahul Ramaka

E-mail: rahulathreya@yahoo.com

Telephone: +44 7763 331895

Portfolio^{New!}: <https://muffpy.github.io/>

Education

- 2019-22** **Department of Informatics, King's College London**
BSc Hons., Computer Science, *First-Class Honours*.
John Oriel Prize (awarded to the student who has shown the most distinction in their final exams.)
John Wiley & Sons 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

- summer 2024** **Artificial Intelligence Platform (AIP) London, Palantir**
Software Engineer (Dev) Intern
- spring 2024** **Real-time bidding (RTB) Statistics, Quantcast**
Forward Deployed Software Engineer Intern
- Onboarding first-party data from digital advertising clients onto Quantcast's DSP (demand-side platform).
- summer 2023** **International Receive (Swift Payments integration), Wise**
Software Engineering Intern
- Worked in cross-border payments during the Swift-Wise integration plan.
 - Experimented in QoS-aware payment pre-validation on the edge and intrinsic data integrity/provenance using cryptographic infrastructure.
- spring 2023** **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.
- fall 2022** **DevOpsGuru, Amazon Web Services**
SDE Intern
- Designed and implemented ML solution to cluster customer Cloudformation graphs, thereby prioritising support for common operational patterns.
 - Scalable and hybrid model hosted in AWS (SageMaker, Glue, Elasticsearch).
- 2021-2022** **Department of Informatics, NMES, King's College London**
Teaching Associate: C++ programming (2021) and Operating Systems (2022)
- Head TA for the Operating Systems & Concurrency (2022) module.
 - Tutored students in OS development, C/C++ programming and Unix.

- summer 2021** **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 AWS Elemental MediaLive live processing.
- summer 2020** **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 compiler in Scala

Skills

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

Data mining: MapReduce systems, LS hashing buckets, inverted indexes and graph mining.

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

Database systems: MySQL, PostgreSQL, SQL Azure, MongoDB and Elasticsearch.

Operating systems level practical development experience across various components.

- Multiple user-space virtualization with container orchestrators like Docker and Kubernetes.
- Hypervisor and emulator tools like Hyper-V, VMware, KVM, QEMU and VirtualBox.
- Inter-process communication within kernel space using FIFOs and domain sockets.
- Shared-memory communication between concurrent components using interrupts, locks, semaphores and monitors.
- Message passing communication using RPC (rpcgen).
- Diagnostic tracing methods in Unix using strace (Linux), dtruss (macOS), dtrace.

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