

Experience

- June 2023 - present **Software Engineer** Tesco *London, UK*
- Enabling a new marketplace Ad business proposition by leading a team of 3 engineers to implement a product catalogue comprised of up to 8M third-party seller products using Java, Kafka and Groovy
 - Reduced Ad performance reporting time from daily to real-time by leading the transition of an Ad generation service with 1M unique daily users and 20M daily requests to an event-based architecture
 - Increased online Ad revenue by an average of 4.6% (Oct - Jan 2023), through designing and implementing an enhanced Ad filter showing sponsored products based on the user's chosen delivery date
 - Implemented an active-passive disaster recovery strategy for an event-based architecture processing 122M million events daily making 1200 TPS using Kafka Mirrormaker 2 and Azure DevOps
 - Resolved 5 P1s, 19 P2s and 71 P3+ production issues as part of the on-call duty rota
 - Interviewed and mentored graduate engineers
- Sep 2021 - May 2023 **Backend Engineer** Acre Platforms Limited *London, UK*
- Led design and development of a high-priority microservice that continuously synchronizes concurrent changes of 7000+ clients via webhooks, RESTful APIs and gRPC using Go, PostgreSQL, Redis and Protobuf
 - Investigated industry-standard monitoring solutions and wrote a set of guidelines internally used to set up monitoring and logging for 30+ microservices
 - Mentored two engineers on coding practices and design principles
 - Interviewed junior and mid-level engineers
- Sep 2019 - Sep 2021 **PhD Student in Computer Systems Architecture** University of Edinburgh *Edinburgh, UK*
- Researched compiler-based garbage collection optimisations targeted at big data frameworks like Spark and Hadoop
 - Discovered a parallel pattern-based approach that improved execution time by 1.3x and reduced memory usage by 2x for benchmarks resembling real-life big data applications
 - Published an open-source [Hotspot JVM extension](#) in C++ that enables manual memory management in Java
- Jan 2021 **Programming Language Research Engineer Intern** Huawei R&D *Edinburgh, UK*
- Adapted to a complex C++ codebase and delivered impactful contributions in the first couple of weeks
 - Optimised the translation of enums and switch statements in the frontend of a high-performance compiler by implementing a novel intermediate representation
- Summer 2018, 2019 **Software Engineer Intern** TalentTicker *Cardiff, UK*
- Developed a serverless data processing pipeline in AWS using Python, AWS Lambda and MongoDB to process 10000+ job vacancies daily
- Summer 2017 **Software Engineer Intern** JP Morgan & Chase *Glasgow, UK*
- Improved a messaging simulator used for testing with Java, Spring Boot, JUnit, Cucumber, Angular.js and reduced delivery time by helping product owners perform E2E tests more efficiently

Education

- 2014 - 2019 **University of St Andrews** MSci (Hons) Computer Science *St Andrews, UK*
- Graduated with First Class Honours
 - Awarded Dean's List in 2018, 2019
 - Elected by fellow students as Computer Science School President

Skills

- Languages Java, Go, Python, Lisp, C++, SQL, Bash
- Technologies PostgreSQL, Redis, MongoDB, Spring Boot, Kafka, Kafka Streams, Protobuf, gRPC, Git
- Infrastructure AWS, Azure, Docker, Kubernetes, Terraform, Serverless
- Concepts Agile, CI/CD, REST, API and architecture design at scale, OOP, TDD, functional programming