Saif Nasir

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EDUCATION

King's College London — London, UK
Bachelor of Science (Hons) in Computer Science — *September 2022 – May 2025*
- Predicted grade: First class.
- Dissertation: Optimized compiler flags using AI-driven Genetic Algorithms to enhance code performance.
- Courses: Data Structures (92%), Database Systems (82%), Elementary Logic (80%), Optimization Methods and Concurrency, Compilers and Formal languages, Network Security, Machine Learning,
- Inclusive Careers Ambassador: Hosted panel events and led workshop on web development for 100+ students.
- Hackathons: Winner of Datalogz (120+ participants), and participant in Algothon at Imperial College London, IC Hackathon '25 (700+ participants).

EXPERIENCE

Software Developer Intern — May 2024 – July 2024
Sky Bullion Trading — *Dubai, UAE*
- Developed and launched a financial dashboard for real-time tracking of gold prices and market trends, enhancing data-driven decision-making processes that increased trading accuracy by 35%.
- Implemented a RAG system with vector similarity search, achieving 95% query accuracy

Software Developer Intern — November 2023 – March 2024
King's Labs — *London, UK*
- Created a Django API for daily trading data retrieval, displaying equity and derivative metrics in real-time.
- Built an automated data pipeline using Cron jobs, reducing manual processing by 20 hours per month.
- Developed interactive financial charts that streamlined market analysis for the trading team, providing clear trend visualizations which led to improved trading strategies and informed decision-making.
- https://www.kingscapital.org/portfolio

PROJECTS

Compilers Module Coursework | *Scala, JVM (Jasmin), LLVM-IR* — November 2024 – January 2025
- Implemented lexers, parsers, and interpreters using parser combinators, producing efficient and optimized code.
- Functional Language: Built a compiler targeting LLVM Intermediate Representation (LLVM-IR), incorporating type inference, compiling programs such as Mandelbrot visualization and Tower of Hanoi.
- While Language: Generated JVM-compatible assembler code using Jasmin; added support for loops, break statements, and control flow constructs.

Sky Tutors Platform | *TypeScript, Python* — July 2024 – September 2024
- Architected and launched a full-stack online tutoring platform using Next.js, PostgreSQL, and Prisma, processing 80+ tutoring sessions monthly.
- Enhanced database performance through query optimization and caching strategies, yielding a 40% reduction in page load time.

InfOS Operating System Development | *C/C++* — February 2024 – March 2024
- Designed key OS features like on-demand paging and memory allocation optimizations, improving resource efficiency by 30%.
- Enhanced InfOS functionality on a Linux-based virtualized environment, adding deferred copy-in and page permission controls to demonstrate low-level systems programming expertise.

University of Cambridge - Unibots | *C++, Python* — September 2023 – October 2023
- Programmed Arduino-driven autonomous robot, achieving a 20% increase in efficiency during ping pong ball collection in a competitive multi-robot environment.
- Designed omnidirectional movement algorithms and adversary avoidance systems for autonomous robots.

SKILLS

Languages: Python, C++, SQL (Postgres), Typescript, Java, Scala, Go
Frameworks and Libraries: Next.js, Node.js, FastAPI, Django, Pandas, NumPy,
Developer Tools: Git, GitHub, Docker, Jenkins, IntelliJ, Vercel, SonarQube, Sentry, Linux (Ubuntu)