

Anuj Vaishnav

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Experience

2023 Feb – present **Senior Software Engineer**, Bloomberg, UK.

- Using C++/Python to build a performant and reliable Fixed Income Trading blotter system.
- Responsible for enhancing and maintaining over 12 microservices.
- Driving automated performance testing initiative for distributed systems.

2021 Aug – 2023 Feb **Senior Product Apps. Engineer**, AMD (acquired Xilinx), UK.

- Analyse latency spikes and bottlenecks on trading platforms to optimise performance (kernel bypass, CPU cycles, cache usage, OS tuning, server tuning) whilst improving reliability.
- Client-facing position advising and working with traders and exchanges on low-latency networking
- Using C/C++ to aid in the development of software stack for Onload, drivers, and NIC firmware.

2020 Nov – 2021 Jul **Co-Founder**, Cohst.me, India/Switzerland

We started with a SaaS platform to help monetise video call services for small businesses and creators. Later pivoted to AI powered tools for Influencer marketing for the same customers.

- Integrated open-source video calling platform, payment services, MongoDB and front-end with Python.
- Built a crawler for profiles and machine learning models to match businesses and influencers.
- Continuously did software development, refined business model, marketing and administration tasks.

2017 Sep – 2020 Aug **PhD Researcher**, APT Group, University of Manchester, UK.

- Worked in a fast-paced environment with 4 other researchers where we planned, engineered, evaluated and published research almost every 3 months.
- Responsible as a lead for project management, open-source release, live demo, system design and implementation for FOS – FPGA Operating System.
- Supervised and mentored 2 interns while also giving talks and demos at conferences worldwide.

2018 Sep-Nov **Consulting IoT Platform Engineer**, HTV GmbH / University of Manchester, Germany/UK.

- Delivered PetaLinux-based IoT platform with remote access for hardware accelerators.
- Developed userspace drivers for cryptography accelerators (AES and Keccak/SHA3).
- Wrote tutorials and documentation for the platform handover.

2016 Jul-Sep **Hardware Intern – Design & Verification**, ARM, UK.

- Extended verification simulator to support legacy and upcoming AMBA bus protocols for better coverage.
- Created a new regression workflow for the lint tool and its continuous integration.
- Reported and resolved bugs in workflow and verification test benches.

2015 July-Aug Summer Research Assistant, APT Group, University of Manchester, UK.

- Designed a single instruction computer architecture based on data-flow graphs.
- Built a high-level functional and performance modelling simulator in JAVA.
- Summarised findings from experiments, design analysis and literature in technical reports.

Education

2017 – 2020 PhD Computer Science, University of Manchester, UK.

Research Topic: *Modular FPGA Systems with Support for Dynamic Workloads and Virtualisation*.
Supervised by: *Dr. Dirk Koch* and *Dr. James Garside*

Research focus: Built a modular development stack and dynamic runtime system for *elastic* and *scalable deployment* of hardware accelerators in the cloud and at the edge. Full list of 15+ publications and citations available on Google Scholar: <https://scholar.google.co.uk/citations?user=GIMyblcAAAAJ>

2014 – 2017 BEng (Hons) Computer System Engineering, University of Manchester, UK.

First-class degree with 85% and major in both *software* and *hardware* engineering.

- Final year project: Developed a library of high-performance hardware accelerators for security algorithms with a strict resource budget and vector interface.
- Modules included: Agile Software Engineering, Machine Learning, Software Evolution, Compilers, Cryptography and Network Security, Chip Multiprocessors, and Documents on the Web.

Awards:

- **President's Doctoral Scholar Award, University of Manchester – 2017-21**
Top 3% of research students across the university who demonstrate academic excellence & leadership potential.
- **Runner Up for Outstanding Doctoral Paper in Computer Science, University of Manchester – 2017-18**
Second-place winner across the school for best research paper of the year.
- **Edwards Prize, University of Manchester – 2016-17**
For the highest distinction in Computer Engineering courses throughout the degree.
- **IBM Team Challenge Award, University of Manchester – 2015-16**
For the consistent sterling performance of the team on all Software Engineering coursework.
- **Kate Kneebone Acorn Bursary, University of Manchester – 2015-16**
For academic merit & showing commitment, determination, enthusiasm, personal application & promise.
- **Golden Anniversary Prizes, University of Manchester – 2014-15**
For Excellence in first-year studies. Given to the top 5 students of the year

Technical Skills

Object-oriented lang.: C++ • Python • Java • Ruby • Matlab

Front-end dev: JavaScript • HTML + CSS • XSL • JSON

Embedded systems: C • ARM assembly • PetaLinux • Userspace drivers

Hardware: Verilog • High-level simulation • Verification test-bench • Functional coverage

OS & other software: SQL • OpenCL • Bash • Tcsh • JUnit Testing • GNU/Linux • Windows • Gitlab