HARSHIT (HARRY) SHARMA

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EDUCATION, SKILLS AND CERTIFICATIONS

King's College London *Sep 2021 - May 2025*
BSc. Computer Science with A Year In Industry, 4 years - 2:1.

The Duston School *Sep 2014 - May 2021*
A-Levels: Maths (A), Computer Science (B), Chemistry (B).

GCSE: Geography (9), Math (8), History (8), Combined Science (8/7), English Literature (7), Computer Science (6), English Language (6), Business Studies (LM2).

Programming Languages:
Python, Java, Golang, C++/C, Scala, Lua, Javascript, Rust, R.

Tools:
Linux, Docker, Prometheus, Grafana, Spack, Puppet, OpenTofu/Terraform, OpenStack, GLPI.

Languages:
English and Hindi.

PROJECTS

Federated Learning and Supplementary Privacy Enhancing Technologies *Oct 2024 - Apr 2025*

- Conducted standardised measurements on 4 randomised CIFAR100 datasets, evaluating Federated Learning and Privacy Enhancing Technologies such as Differential Privacy and Secure Aggregation Protocols.
- Implemented FlowerAI integration with custom Differential Privacy solution to highlight 10-60% loss in data quality based on how strong it is.
- Developed interactive Jupyter notebooks documenting comparative analysis of 4 PET approaches, highlighting quantified pros and cons for each method.
- Built reproducible demonstration platform using Python Flask routing and Chart.js for real-time metrics visualisation, supporting up to 25,000+ batch image metric calculation.

Recipe Generator Domain Specific Modelling Language (DSML) *Jan 2025 - Apr 2025*

- Designed and implemented DSML using Xtext, enabling food bloggers to created unified recipe template in plain English, reducing content creation time by up to 60%.
- Automated recipe generation across 4 widely used formats (HTML, JSON, Markdown, XML) with zero inconsistencies.
- Introduced Xtend validation and scoping rules for type checking and static analysis, which improved clarity of error messages.
- Developed comprehensive test suite using Xpect, achieving 100% pass rate and 95% code coverage across grammar, abstract syntax, validation and scoping rules.

CIUK 2024 Cluster Challenge *Sep 2024 - Dec 2024*

- Led 6-member King's College London team in a national High Performance Computing (HPC) hackathon event.
- Completed 8 technical challenges from industry partners (Alces Flight, OCF, Logicalis and DDN), demonstrating expertise in HPC technologies.
- Mentored 5 team members on containerisation technologies (Singularity, Docker) and monitoring systems (Grafana, Kafka), improving team competency by 40%.
- Delivered solutions under 48-hour time constraints, managing team coordination and technical implementation across multiple concurrent challenges.

Helpdesk - Smart Ticketing System - Group Project *Jan 2023 - Apr 2023*

- Collaborated within 10-member development team to build two-part ticketing application using Django, JavaScript, HTML, and CSS, processing 100+ student queries.
- Architected back-end routing system using Django's routing library, handling 25+ endpoints with 99.5% up time.
- Enhanced front-end consistency by implementing Bootstrap and Tailwind frameworks, improving user experience scores by 30%.
- Authored comprehensive test suite using Pytest and Unittest, achieving 95% code coverage with Coverage library reporting.
- Established CI/CD pipeline through GitHub workflows, reducing deployment by 65% and automating 50+ pull requests.

WORK EXPERIENCE

King's College London - eResearch *Sep 2023 - Sep 2024*

- Deployed Infrastructure as Code solutions using Puppet and Terraform/OpenTofu, managing 50+ HPC and Cloud cluster nodes with 99.8% availability.
- Built and deployed 20+ software packages for HPC clusters through Spack package manager, reducing installation by 45% through Puppet automation and contributing 5 open source commits to Spack repository.
- Resolved 150+ user technical issues using Linux tools (rsync/scp, stat, pkill/kill) maintaining resolution time under 3 hours and managing SLURM scheduler job allocations for 1500+ concurrent users.
- Monitored system performance using Grafana and Prometheus, identifying and resolving 15+ anomalous CPU/GPU usage spikes, preventing downtime affecting 1500+ users.
- Installed and configured 10+ GPUs and servers, completing hardware upgrades that increased computational capacity by 45%.
- Executed data migrations affecting 5TB+ datasets and upgraded 25+ internal packages, maintaining zero data loss during transition.
- Created technical documentation using MkDocs for 15+ procedures, improving onboarding efficiency by 30% through Puppet-automated testing and deployment.
- Developed automated Slack notification bot using Python client library, reducing critical ticket response time by 60% through real-time GLPI API integration, WebSocket connectivity, and secure deployment via Terraform/OpenTofu vault management with systemctl background processing.