DOMINIC LINDSAY

Research Engineer & PhD Candidate (Interested in Decentralised Resource Management Systems)

@ dcrl94@gmail.com @ d.lindsay4@lancaster.ac.uk +447564337668 Manchester, United Kingdom
esl.lancs.ac.uk dslab.lancs.ac.uk in https://www.linkedin.com/in/dominic-lindsay-a7951478
https://github.com/Babbleshack

Experienced and passionate Research Engineer with strong demonstrated history of working in both academic and software industries. Currently working towards a PhD of Computer Science. Research focused on development of novel resource management and scheduling policies for decentralised clusters. Strong experience of managing and deploying large scale distributed systems and infrastructure as well as Operating Systems development for both Linux and embedded systems.

RESEARCH & PUBLICATIONS

[1] Sukhpal Gill, Shreshth Tuli, et al. “Transformative Effects of IoT, Blockchain and Artificial Intelligence on Cloud Computing: Evolution, Vision, Trends and Open Challenges”. English. In: *Internet of Things* 8 (Dec. 2019). ISSN: 2542-6605. DOI: 10.1016/j.iot.2019.100118

[2] Dominic Lindsay, Sukhpal Gill, et al. “PRISM: An Experiment Framework for Straggler Analytics within Containerized Clusters”. In: *WoC 2019 Fifth International Workshop on Container Technologies and Container Clouds*. ACM, Dec. 2019, pp. 13–18. ISBN: 9781450370332. DOI: 10.1145/3366615.3368353

PROFESSIONAL EXPERIENCE & PROJECTS

June 2020 — September 2020 | Arm Research | Research Engineer Internship
Interned as part of Security Research team, contributed to two projects. Developed memory and capability management libraries for formally verified kernel. Development of distributed trusted computation platform enabling execution of applications amongst mutually distrusting peers.

September 2017 — Present | Lancaster University | Associate Lecturer
Teaching and coursework development, as well as lecture development and delivery across Operating Systems, Networking and Distributed Systems.

September 2017 — January 2019 | Demopad Software | Software Engineer
Worked across several projects including development of CI/CD platform, Nest thermostat controller, and integration of disparate system components into a single distributed system.

July 2016 — September 2017 | SCISYS | Software Engineer
Worked on several internal and external projects including automated verification system for RNLI SIMS system, development of prototype situational awareness systems for outdoor environments, and safety critical rail infrastructure for Siemens Rail.

EDUCATION

September 2017 — Present | Lancaster University | PhD Computer Science
Orchestration systems for decentralised infrastructures. Investigates impact of inter-cluster characteristics such as sporadic utilisation, cross cluster latency and workload affinity. Specifically focused on development of novel scheduling policies and resource management systems for federated systems.

October 2012 — June 2016 | Lancaster University | Msci Software Engineering (1st class honours)
Core Modules: *Software Design Studio — Part 1 & 2, Distributed Systems, Advance Distributed Systems, Operating Systems, Networking, Advanced Programming, Communication Systems*

LARGE SCALE INFRASTRUCTURE MANAGMENT

I am responsible for managing a large scale research cluster composed of over 100 heterogenous CPU/GPU nodes. I have been responsible for facilitating a wide range of research activities ranging from Deep Learning infrastructure, secure systems development and development of orchestration systems.

HOBBIES & INTERESTS

Hobbies: Cycling, Running, Hiking, Camping, Climbing
Driving Licence: Learning

SKILLS & EXPERTISE

Programming Languages: C, C++, Rust, GoLang, Lua, Java, Python, R, HTML, CSS, JavaScript, LaTeX

Technologies: Linux, Linux internals, Sel4 OS, Docker, Kubernetes, Apache YARN & HDFS, Apache Spark, CEPH, Java Spring, ELK Stack, Numpy, Pandas, GRPC, Java RMI

Expertise: Profiling, Resource Management and Scheduling, Networking, DNS, Systems Programming, Capability systems, PKI, SSL/TLS, Operating Systems, Distributed Systems concepts and design.

REFERENCES

PhD Supervisor Dr. Peter Garraghan (p.garraghan@lancaster.ac.uk), **PhD Supervisor** Dr. Yehia Elkhatib (y.elkhatib@lancaster.ac.uk), **FYP Supervisor** Dr. Gerald Kotonya (g.kotonya@lancaster.ac.uk), **ARM Supervisor** Nick Spinale (nick.spinale@arm.com)