



EDUCATION

Oct 2019 May 2023	University of Cambridge, PhD. Computer Science > Research topic on the optimization of Computer Systems with Bayesian optimization. > Awarded funding from <i>The Alan Turing Institute</i> , the national institute for data science and AI. > Awarded an <i>Honorary Cambridge Trust</i> scholarship.	Cambridge, UK
Oct 2018 Jun 2019	University of Cambridge, MPhil. Advanced Computer Science > Awarded <i>Cambridge Trust & Students of Cambridge</i> scholarships. > Achieved a <i>Distinction</i> (80%) in a research master on optimizing large-scale systems using machine learning.	Cambridge, UK
Sep 2014 Jun 2018	The University of Manchester, BSc. Computer Science with Industrial Experience > Awarded <i>Head of School Award</i> for an outstanding contribution to the life of the School of Computer Science. > Consistently achieved <i>First Class</i> (80%) results in every year. > Elected as the second-year students' representative.	Manchester, UK



EXPERIENCE

Jul 2019 Oct 2019	Twitter, Software Engineer Intern - Events Quality > Structured Twitter's event page by analyzing and classifying the perspective of tweets. > Experimented with real-time clustering algorithm for detecting break-out events.	London, UK
	Real-Time Clustering Algorithm Machine Learning Unsupervised Learning Scala	
Jun 2018 Sep 2018	Twitter, Software Engineer Intern - Live Video > Reduced abuse in broadcasts chats by implementing a machine learning-based model to classify messages. > Visualised the project's impact by designing MapReduce jobs to analyse data from multiple sources.	London, UK
	Scala Go SQL AWS gCloud	
Jun 2017 Sep 2017	Google, Site Reliability Engineer Intern - Google Cloud > Automated the detection of anti-pattern usage of Cloud DataStore by designing a batch job running over petabytes of data. > Improved site reliability engineers' response time to escalations by providing dashboards that analyze customer usage patterns.	London, UK
	Python Golang SQL MapReduce gCloud SRE	
Jul 2016 Jun 2017	Amazon, Software Development Engineer - Prime Video > Reduced costs incurred on our team by £2M through optimising our cluster's configurations and host types. > Developed a low-latency tier-one micro-service responsible for PIN authentication workflow. > Provided the BI team with real-time analysis by using Kinesis stream into our data warehouse.	London, UK
	AWS Python Java Spring DevOps	
Sep 2015 Jun 2018	The University of Manchester, Student Assistant - School of Computer Science > Developed outreach activities using Drones and Oculus to teach programming in schools. > Integrated the school's labs into AWS and Azure and produced lab manuals.	Manchester, UK
	Azure NodeJS OculusRift	



PUBLICATIONS

2021 Conference	BoGraph : Structured Bayesian Optimization From Trace. <i>Sami Alabed, Eiko Yoneki. In review</i> > Structured Bayesian optimization with automated structure discovery from trace using Bayesian Network. > BoGraph auto-tuned the co-design of a hardware accelerator and optimize the energy latency by 5.4x.	In Review
	Causal Graph Bayesian Network Bayesian Optimization SoC optimization	
2021 Workshop	High-Dimensional Bayesian Optimization with Multi-Task Learning for RocksDB. <i>Sami Alabed, Eiko Yoneki. ISBN : 9781450382984, DOI:10.1145/3437984.3458841</i> > Optimized the database I/O throughput by 1.3x and was 5x faster than other optimization methods. > Contributed a method that injects expert knowledge in a multi-task Gaussian Process.	EuroSys, EuroMLSys21
	Bayesian Optimization Multi-task Gaussian Process System Optimization	
2019 Preprint	RLCache : Automated Cache Management Using Reinforcement Learning. <i>Sami Alabed. arXiv:1909.13839</i> > Improved cache management decisions by 20% using a multi-agents RL that performs eviction, TTL estimation, and caching decisions.	arXiv
	Reinforcement Learning Multi-agent Reinforcement Learning System Optimization	

SELECTED PROJECTS

OPEN SOURCE PROJECTS

MULTI-OBJECTIVE BAYESIAN OPTIMIZATION IN GARBAGE COLLECTOR

Improved the read and write latency of Cassandra by 30% compared to baselines by tuning its garbage collector parameters. Constructed the Gaussian Process using ICM kernel to model the multi-task nature of the problem.

[PyTorch](#) [Bayesian Optimization](#) [Python](#)

REINFORCEMENT LEARNING CACHE MANAGER

Optimised cache utilisation by 20% by building a multi-task reinforcement learning powered cache manager to estimate time-to-live and make caching & eviction decision keys. Built a framework to model cache management as a reinforcement learning problem, the framework supported multi-agent and single agent implementations.

[GitHub](#) [Tensorflow](#) [Reinforcement Learning](#) [Python](#)

METHOD NAME PREDICTION

Implemented a convolutional attention network to summarise Java source code and predict suitable method name based on a published research paper.

[GitHub](#) [Tensorflow](#) [Machine Learning](#) [Keras](#) [Python](#) [NLP](#) [CNN](#) [Attention](#)

EDGE COMPUTING : IOT ON THE EDGE

Reduced the IoT devices dependency on the cloud and improved their performance by building elastic and reliable edge network by using Docker containers.

[Docker](#) [Edge Computing](#) [Python](#) [FaaS](#) [IoT](#)

KALAHAI : BOARDGAME BOT

Developed a self-learning bot to play Mancala inspired by AlphaGo's paper.
Awarded highest score in term of speed and win rate against 13 other bots.

[GitHub](#) [Tensorflow](#) [Reinforcement Learning](#) [AlphaGo](#) [Python](#)

HACKATHONS PROJECTS

GENIE : THE SMART CHATBOT FOR EVERYDAY SERVICES,

HACKATHON : HackLondon, 2016


A chatbot written in NodeJs integrated with various online services to ease the process of purchasing online.

 **Awards :** JP Morgan's Hack Choice. [NodeJs](#) [Natural Language Processing](#)

MEDREADER,

HACKATHON : AMEE Hackathon, 2015

Speed reading app using Java to ease the consumption of medical papers.

 **Awards :** First Place and the Best Use of Elsevier Data. [Java](#) [ElasticSearch](#)

CURRENCY&STOCK OFFLINE TRADER,

HACKATHON : Warwick University Hackathon, 2014

Financial querying system to enable currency and stock exchange through SMS built using Java.

 **Awards :** Best use of Bloomberg API. [Java](#) [SMS](#)

LEADERSHIP

Sep 2017 Jun 2018	Peer Assisted Study Session, PASS2 Coordinator ‣ Awarded <i>Outstanding Contribution to Peer Support</i> award. ‣ Improved the employability of students by running interview preparation, industry talks, and CV workshops.	Manchester, UK
Sep 2015 Jun 2016	Microsoft - DevEvangelist, Student Partner ‣ Ranked in the top five Microsoft student partners in impact on Software Development, and Leadership. ‣ Increased the adaptability of Microsoft's development tools and cloud services by hosting training workshops.	Manchester, UK
Sep 2015 Jun 2016	HackSoc MCR, Co-Founder ‣ Ran HackSoc focusing on hackathons and tech workshops and won the EU student hackathon league twice. ‣ Managed a team of 30 students to raise sponsorship for a total of £65,000 and co-organised seven hackathons.	Manchester, UK

TEACHING

Research projects	Model-based Reinforcement Learning in Optimizing Deep Learning Graphs (2019-20). Auto-tuning Spark with Directed Acyclic Graph Models in Bayesian Optimization (2019-20).
Developing Labs	Large-Scale Data Processing and Optimization, Data Science.
Courses Supervision	Concurrent and Distributed systems, Data Science, Machine Learning and Bayesian Inference.
Tutorials	Large-Scale Data Processing and Optimization.