Bashir Mohammed

Berkeley, California, CA USA
Email: bashirmohammed8000@gmail.com
Homepage: https://bashirmohd.github.io/

Education

PhD. Computer Science, University of Bradford, UK. Nov.2014 – July.2019
Thesis: "*A Predictive Framework for Efficient Management of Fault Tolerance in Cloud Data Centres and High-Performance Computing Systems"*
Supervisors: Professor. Hassan Ugail and Professor. Irfan Awan
Examiners: Professor Demetres Kouvatsos and Professor Karim Djemame (University of Leeds, UK).

MSc. Control Systems Engineering, University of Sheffield UK. Sept.2010 – Feb.2012
Thesis: *"Combustor Temperature Measurement in Gas Turbine Engines (GTE)*" with Rolls Royce Group, University Technology Centre. Sheffield UK.
Supervisors: Professor. Peter Fleming and Dr Andy Mills (Rolls Royce University Technology Centre, UK).

Work Experience

Staff Lead AI Solutions Architect – Office of the Chief Technology officer (OCTO)
Intel Corporation, Santa Clara California, USA. Dec 2022 – Present
Working in the Network and Edge (NEX) Group, under the distributed edge and infrastructure platform. (DEIP), NEX Platform Office (NPO)
Line Managers: Raul Diaz – Snr PE and Snr. Director NEX, Dr Kiran Joshi-VP Network and Edge AI.

Technical Functions: Currently working with Natural language and Vision based models, Large Language Models (LLMs), Large Vision Models (LVMs), Small Language Models (SLMs), Vector Databases (DBs) and Retrieval Augmented Generation (RAG) pipeline development. Developing Prompt engines for anti-hallucination, Developing Agentic workflows, Finetuning open-source model based on specific requirement from Customers. Developed theft detection solutions and video understanding solutions in retail stores using LVMs, LLMs and muti agent frameworks.

AI Integration for Product Enhancement: Harnessing Generative AI and LLM capabilities to fuel innovation and transformation within Intel's distributed edge infrastructure platform group.

Architecture Design for NEX: Architecting a versatile, LLM and Generative AI-powered front-end interface for NEX, catering to a broad user base across the Group.

Performance Metrics & Model Selection: Crafting a sophisticated model comparison and recommendation framework to gauge and determine the optimal models for Intel edge hardware.

AI Use Case Development: Spearheading the ideation and demonstration of AI-driven use cases with the potential to amplify computing demands at the edge and foster innovation within NEX.

Transformer AI Models Assessment: Conducting thorough evaluations of Transformer AI models within Intel's products and championing their advantages for edge deployments over conventional models.

Staff Computational Research Scientist/Engineer,
Lawrence Berkeley National Lab, Berkeley, California, USA. June 2022– Jan 2023
Staff Engineer in the Integrated Data Frameworks Group in the Scientific Data Division at Berkeley Lab.

Current Work\Projects:

1. Project Name: **QUANT-NET** (Quantum Application Network Testbed for Novel Entanglement Technology). QUANT-NET brings together world-leading expertise in quantum technologies, optics, materials, networks, testbed operations, and other assets from Berkeley Lab, UC Berkeley, and Caltech in order to build a proof-of-concept quantum network based on entanglement. This software-controlled, application-focused quantum computing network will link Berkeley Lab and UC Berkeley. The three-node distributed testbed will feature an entanglement swapping substrate over optical fiber and will be managed by a quantum network protocol stack. The collaboration will also demonstrate entanglement between small-scale quantum computers at the two testbed locations.
PI: Inder Monga(ESNet), Lavanya Ramakrishnan, Wenji Wu, David Santiago, Thomas Schenkel(Berkeley Lab), Prof Hartmut Häffner(UC Berkeley), Prof Alp Sipahigil(UC Berkeley), Prof Maria Spiropulu(CalTech)

2. Project Name: **CRD-NERSC supporting workflows.**
Focusing on intelligent scientific workflow data management, real-time stream processing, and data provenance.
PI-Lavanya Ramakrishnan, Nick Wright, Lisa Gerhardt

3. Project Name: **Securing Automated, Adaptive Learning-Driven Cyber-Physical System Processes.**
Building a Self-Driving Synthetic Biology Labs. ML processes used by Automated Recommendation Tool (ART) — domain-agnostic Bayesian ensemble modeling approaches.
PI-Sean Peisert, Dan Arnold

Postdoctoral Researcher,
Lawrence Berkeley National Lab, Berkeley, California, USA. April.2019 – June 2022
Advisor: Dr. Keshang John Wu, Dr. Mariam Kiran.
Working on the "Large-scale Deep Learning for Intelligent Networks" project, funded by the US Department of Energy (DOE), Office of Advanced Scientific Computing Research at Berkeley Lab.
My research involves modelling, analysis and building large scale deep learning models for Self-Driving Autonomous Networks. I developed AI and Machine Learning algorithms to optimally control distributed network resources, improve high-speed big data transfers and control high-speed networks that will eventually minimize network downtime and avoid network traffic congestion for important exacscale scientific workflows.
This work resulted to publications in top networking conferences and journals including best paper award at the Machine Learning for Networking Conference.

Research Grants

Past Funded Research

Deep Learning & Artificial Intelligence High-Performance Networks (DAPHNE) April.2019 –June 2022

Principal Investigators: Dr. Mariam Kiran, Dr. Keshang John Wu
Lawrence Berkeley National Lab, Berkeley, California
US DOE Earlier Career Fund, $2.5million USD
Role: Co-Author. My work on a novel approach on advancing deep learning for self-learning autonomous network for science and high-performance computing systems.

Deep Learning Based Control for Ultrafast Lasers and Accelerators(DL4ACC) Jan.2020 – June 2022
Principal Investigators: Dr. Mariam Kiran, Dr. Qiang Du
Lawrence Berkeley National Lab, Berkeley, California
US DOE Fund, $288,000 USD

Role: Co-Author. My work on a novel approach on advancing deep learning based control for ultra-fast lasers and accelerators. This resulted in 4 publications at the Advanced Solid-State Laser conference.

Platform for Explainable Distributed Infrastructure (PoSeiDon) Oct.2021 – June 2022
Principal Investigators: Professor. Ewa Deelman, Dr. Prasanna Balaprakash, Dr. Mariam Kiran and Dr Anirban Mandal.
University of Southern California, Lawrence Berkeley National Laboratory, Argonne National Laboratory and Renaissance Computing Institute.
US DOE office of Advanced Scientific Computing Research Fund,
Role: Co-Author. Currently working as a postdoctoral research fellow on the project. PosEiDon aims to advance the knowledge of how simulation and machine learning (ML) methodologies can be harnessed and amplified to improve DOE's computational and data science.

Industry Experience

AI Collaborator, Los Angeles, California, USA. 2021 - 2023
Role: CTO and Lead Product Manager

- Create and implement technology strategies.
- Present reports on the company's technology status, goals and or progress.
- Align the company's technology resources with the organization's short- and long-term goals.
- Serve on the executive committee to align technology goals to other departmental and organizational objectives.
- Identify what technologies can be used to improve the company's AI products and services.
- Create and oversee high-level KPIs for the AI department.
- Assist in recruiting, on boarding and training AI and ML staffs.
- Manage the department's budget.

Leeds Trinity University, Horsforth Leeds. UK 2017 - 2018
Role: IT Support Specialist, IT Services Department

- Undertaking routine network user account administration duties using the Windows active directory (AD), which include password resets in relation to the University Network and the Virtual Learning Environment.
- Providing 2nd & 3rd line support to users requiring assistance with the University's IT system, including the suite of Microsoft products and other core University software and services, Office 365 services, the Virtual Learning Environment, the library management system, electronic resources, Intranet, remote access service, mobile device setup, wireless connectivity.

Nabafat Consulting Services LLC. United Kingdom 2013 - 2018
Role: Head of AI/ML /Technical Program Manager

- Conceptualizing how AI / ML can be applied to drive customer value
- Working with the cross-functional team to bring conceptualize AI/ML ideas to life.
- Involved in product development from conception to launch.
- Worked closely with Customers to deeply understand their problems and needs.
- Own feature / product development from conception to launch.
- Always trying to understand the problems and needs of our customers.
- Define & analyze metrics to understand feature adoption & guide development of existing features
- Managing and executing high quality product delivery
- Managing and exercising technical judgment in solving software engineering challenges

Mentoring Experience

The Berkeley Lab Teaching Scholar – K-12 STEM Education 2020
Mentor – The education and outreach programs, K-12 STEM mentorship programs at Lawrence Berkeley National Laboratory.

Stanford University – SAGE-S Summer Camp 2020
Mentor – The Stanford University SAGE-S (Science Accelerating Girls' Engagement in STEM) for High School Girls. We encourage engagement in STEM career paths through career talks, small projects, and professional development.

Teens in AI 2020
Mentor – The Teens In AI initiative, launched at the AI for Good Global Summit at the UN in May 2018, exists to inspire the next generation of ethical AI researchers, entrepreneurs and leaders who will shape the world of tomorrow. It aims to give young people early exposure to AI being developed & deployed for social good.

Coach and Mentor – Codecademy Artificial Intelligence Accelerator Course 2021
Coach – The Black and Brilliant Advocacy Network & Codecademy AI Accelerator Course.

Data Science Network Foundation (DSNF) in Africa 2021
Mentor – Mentoring Young students via the DSNF Platform: A Non-profit organization committed to raising one million Artificial intelligence talents in ten years

The Africa I Know (TAIK) 2021
Mentor – I am currently leading the mentorship program effort at TAIK, which is a non-profit organization that inspires and mentors young Africans in STEM so they can unlock their full potentials.

TIIDELab 2021
Mentor – Mentor on TIIDELab, an acronym for THINK, INNOVATE, IDEATE, DEVELOP and EXECUTE. I help to mentor, inspire and provides solutions to challenges faced by youths when trying to harness business novel ideas with technology.

Awards

Society of Industrial & Applied Mathematics (SIAM) Science Policy Fellowship Award 2023
As a Science Policy Fellowship recipient, I play an important role in representing the SIAM community to policymakers in Washington, D.C.

Google Artificial Intelligence Explore Machine Learning - Program Facilitator 2021
Selected by Google AI explore ML program as a Facilitator

Coach, Codecademy Artificial Intelligence Accelerator Course 2021
Selected as a Coach on the Black and Brilliant Advocacy Network & Codecademy AI Accelerator Course.

Digital Technology Exceptional Talent UK Visa Endorsement (Tech Nation) 2020
Endorsed by the UK government as a World Leading Exceptional Talent in Digital Technology.

Winner, Berkeley Lab Research SLAM Award. 2019
For Early Career Scientists and Postdocs at the Lawrence Berkeley National Laboratory, Berkeley California, USA.

Finalist, Berkeley Lab Research SLAM Award. 2019
For Early Career Scientists and Postdocs at Lawrence Berkeley National Lab, California.

Finalist, The IYPT Elemental Slam Award on Capitol Hill. 2019
The IYPT Elemental Slam Award on Capitol Hill Washington DC. Represented Berkeley Lab and.
My talk to the US Congress on Capitol Hill Washington DC.

Petroleum Technology Development Fund PhD Scholarship Award 2014
Awarded based on academic excellence and performance.

Petroleum Technology Development Fund MSc Scholarship Award 2010
Awarded based on merit.

MSc Project with Rolls Royce UTC Sheffield UK 2008
Project on Combustor Temperature Measurement in Gas Turbine Engines (GTE) with Rolls Royce University Technology Centre Sheffield UK.

TOTAL FINA ELF University Undergraduate Merit Scholarship Award 2003
Awarded based on merit academic performance.

Selected Publications

Du, Qiang, Dan Wang, Tong Zhou, Antonio Gilardi, Mariam Kiran, **Bashir Mohammed,** Derun Li, and Russell Wilcox. "Experimental beam combining stabilization using machine learning trained while phases drift." *Optics Express* 30, no. 8 (2022): 12639-12653.

Wang, Dan, Qiang Du, Tong Zhou, Antonio Gilardi, Mariam Kiran, **Bashir Mohammed,** Derun Li, and Russell Wilcox. "Machine Learning Pattern Recognition Algorithm With Applications to Coherent Laser Combination." *IEEE Journal of Quantum Electronics* 58, no. 6 (2022): 1-9.

Bashir Mohammed, Mariam, Kiran; Bjorn Enders; *NetGraf: An End-to-End Learning Network Monitoring Service.* SC21: IEEE/ACM International Conference for High Performance Computing, Networking, Storage and Analysis. The 8th International Workshop on Innovating the Network for Data-Intensive Science (INDIS 2021), Nov 2021.

Bashir Mohammed, Mariam, Kiran; Bjorn Enders; *Net-Preflight Check: Using File transfer to Measure Network Performance before Large Data Transfers. ICSNC 2021*: The Sixteenth International Conference on Systems and Networks Communications. Oct. 2021.
Bashir Mohammed, Mariam, Kiran; Nandini, Krishnaswamy; Keshang, John Wu; *Predicting WAN Traffic Volumes using Fourier and Multivariate SARIMA Approach.* International Journal of Big Data Intelligence, Oct 2021.

Bashir Mohammed, Mariam Kiran, Dan Wang, Qiang Du, Russell Wilcox, "*Deep Reinforcement Learning based Control for two-dimensional Coherent Combining*", Laser Applications Conference, pp. JTu5A-7. Optical Society of America, 2020., OSA Publishing, December 1, 2020.

Sheng Shen **Bashir Mohammed** and Mariam, Kiran: DynamicDeepFlow: *An Approach for Identifying Changes in Network Traffic Flow Using Unsupervised Clustering*. 4th International Conference on Machine Learning for Networking (MLN'2021), Nov 2021 – ***BEST PAPER AWARD***

Mariam Kiran, **Bashir Mohammed,** Qiang Du, Dan Wang, Sheng Shen, Russell Wilcox, *" Controlling Laser Beam Combining via an Active Reinforcement Learning Algorithm*", Laser Applications Conference, pp. JM3A. Optical Society of America, 2021., OSA Publishing, November 1, 2021.

Divneet Kaur, **Bashir Mohammed,** Mariam, Kiran; *NetGraf: A Collaborative Network Monitoring Stack for Network Experimental Testbeds.* SC20: IEEE/ACM International Conference for High Performance Computing, Networking, Storage and Analysis. Nov 2020.

Mallick, Tanwi, Mariam Kiran, **Bashir Mohammed,** and Prasanna Balaprakash. *Dynamic Graph Neural Network for Traffic Forecasting in Wide Area Networks.* 2020 IEEE International Conference on Big Data (Big Data), pp. 1-10. 2020

Dan Wang, Qiang Du, Tong Zhou, **Bashir Mohammed,** Mariam Kiran, Derun Li, Russell Wilcox, "*Artificial Neural Networks Applied to Stabilization of 81-beam Coherent Combining*", Advanced Solid-State Lasers, Optical Society of America, December 1, 2020,

Nandini, Krishnaswamy; Mariam, Kiran, **Bashir Mohammed,** Singh, Kunal; *Data-driven Learning to Predict WAN Network Traffic*. In Proceedings of the 3rd International Workshop on Systems and Network Telemetry and Analytics, pp. 11-18. 2020.

Mahtout, Hocine, Mariam Kiran, Anu Mercian, and **Bashir Mohammed,** *Using Machine Learning for Intent-based provisioning in High-Speed Science Networks.* In Proceedings of the 3rd International Workshop on Systems and Network Telemetry and Analytics, pp. 27-30. 2020.

Bashir Mohammed, Mariam Kiran, Nandini Krishnaswamy, *DeepRoute on Chameleon: Experimenting with Large-scale Reinforcement Learning and SDN on Chameleon Testbed*. 27th IEEE International Conference on Network Protocols (ICNP), Oct 2019.

Bashir Mohammed, Awan, I., Ugail, H. and Younas, M*., Failure prediction using machine learning in a virtualised HPC system and application.* Cluster Computing, 22(2), pp.471-485, June 2019.

Bashir Mohammed, Krishnaswamy, N. and Kiran, M., *Multivariate Time-Series Prediction for Traffic in Large WAN Topology.* In 2019 ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS) (pp. 1-4). IEEE, Sep 2019.

Kiran, Mariam, **Bashir Mohammed,** and Nandini Krishnaswamy*. DeepRoute: Herding Elephant and Mice Flows with Reinforcement Learning.* In International Conference on Machine Learning for Networking, pp. 296-314. Springer, Cham, 2019.

Bashir Mohammed, Babagana Modu, Kabiru. M. Maiyama, Hassan Ugail, Irfan Awan, Mariam Kiran. *Failure Analysis Modelling in an Infrastructure as a Service (Iaas) Environment,* ELSEVIER Journal of Electronic Notes in Theoretical Computer Sci, Vol. 340, Pages 41-54, ISSN15710661, Oct 2018.

Bashir Mohammed, Mariam Kiran, Kabiru M. Maiyama, Mumtaz M. Kamala, Irfan-Ullah Awan; *Failover strategy for fault tolerance in cloud computing environment,* Software: Practice and Experience 2017 DOI:10.1002/spe.2491, ISSN:00380644, April 2017.

Bashir Mohammed, Mariam Kiran, Irfan-Ullah Awan; *Optimising Fault Tolerance in Real-Time Cloud Computing IaaS Environment.* The 4th International Conference on Future Internet of Things and Cloud (FICLOUD 2016), Vienna, Austria, August 2016.

Bashir Mohammed, Mariam Kiran, Irfan-Ullah Awan*; An Integrated Virtualized Strategy for Fault Tolerance in Cloud Computing Environment*. The 16th IEEE International Conference on Scalable Communication and Communication (SCALCOM 2016), Toulouse, France, July 2016.

Bashir Mohammed, Mariam Kiran*; Analysis of Cloud TestBeds using OpenSource Solutions,* The 3rd International Conference on Future Internet of Things and Cloud (FICLOUD 2015), Rome, Italy, August 2015.

Bashir Mohammed, S Moyo, K.M Maiyama, S. Kinteh*… Technical Report on Deploying a highly secured OpenStack Cloud Infrastructure using BradStack as a Case Study*. arXiv preprint arXiv:1712.09152, 2017.

Bashir Mohammed, M Kiran; *Experimental Report on Setting up a Cloud Computing Environment at the University of Bradford.* Cornell University Library arXiv.org>cs>arXiv: 1412.4582. 2014.

K. M. Maiyama, D. Kouvatsos, **B. Mohammed,** M. Kiran and M. A. Kamala, "*Performance Modelling and Analysis of an OpenStack IaaS Cloud Computing Platform,"* 2017 IEEE 5th International Conference on Future Internet of Things and Cloud (FiCloud), Prague, 2017.

Hussaini Adamu **Bashir Mohammed,** Irfan-Ullah Awan, Hassan Ugail, Ali Bukar Maina; *An approach to failure prediction in a cloud-based environment.* The 5th International Conference on Future Internet of Things and Cloud (FICLOUD 2017), Prague, Czech Republic, August 2017.

K. M. Maiyama, A. P. Namanya, **B. Mohammed,** M. Kiran, D. D. Kouvatsos and M. A. Kamala; *Analytical Performance Evaluation of OpenStack IaaS Cloud Using M/M/1 and M/M/c Queues*, 32nd Annual UK Performance Engineering Workshop & Cyber Security Workshop (UKPEW & CyberSecW - 2016).

Mariam Kiran, Haroon Mir, **Bashir Mohammed,** Ashraf Al Oun, Kabiru Maiyama; *Agent-based Modelling as a Service on Amazon EC2 Opportunities and Challenges,* 8th IEEE/ACM International Conference on Utility and Cloud Computing (UCC 2015), Limassol, Cyprus.

Selected Presentations and Talks

Presentation, "DeepRoute: A Deep Reinforcement Learning approach for Dynamic Network Routing Optimization and SDN on Chameleon Testbed", Special Symposium to Showcase Postdoc's Research at Berkeley Lab. June, 2020.

Paper Presentation, "DeepRoute on Chameleon: Experimenting with Large-scale Reinforcement Learning and SDN on Chameleon Testbed", 2019 IEEE 27th International Conference on Network Protocols (ICNP), September, 2019. -- Paper and Demo Presentation.

Workshop Presentation, "Failure Analysis Modelling in an Infrastructure as a Service (Iaas) Environment", The proceedings of UKPEW 2017, the thirty third Annual UK Performance Engineering Workshops (UKPEW), September, 2018.

Paper Presentation, "An approach to failure prediction in a cloud-based environment", 2017 IEEE 5th International Conference on Future Internet of Things and Cloud (FiCloud 2017) August 2017.

Paper Presentation, "Optimizing Fault Tolerance in Real-Time Cloud Computing IaaS Environment". The 4th International Conference on Future Internet of Things and Cloud (FICLOUD 2016), Vienna, Austria, August, 2016.

Paper Presentation*, "*An Integrated Virtualized Strategy for Fault Tolerance in Cloud Computing Environment", 2016 Intl IEEE Conferences on Ubiquitous Intelligence and Computing, Advanced and Trusted Computing, Scalable Computing and Communications, Cloud and Big Data Computing, Internet of People, and Smart World Congress, July, 2016.

Presentation, "Fault Tolerance in Cloud Computing Environment", MPhil to Ph.D. Progression Presentation, at the University of Bradford, UK. 2016.

Paper Presentation, "Failover Strategy for Cloud Fault Tolerance approach", Network Security and Performance Engineering Workshop, 2015 at the University of Bradford (NeTSPen 2015).

Presentation, "Experimental Case study using Openstack", Bradford Cloud research group visit to EPSRC Centre for Doctorial Training (CDT) Newcastle UK. 2015.

Professional Affiliations

Member, **Association of Computing Machinery (ACM).**

Member, **Institute of Electrical and Electronics Engineers (IEEE).**

Member, **IEEE Computer Society**

Member, **Institute of Engineering and Technology (IET).**

Member, **The British Computer Society (BCS).**

Member, **Society of Industrial and Applied Mathematics (SIAM)**

Professional Services

Program Committee Member – HPC Asia 2022: The International Conference on High Performance Computing in Asia-Pacific Region HPC Asia 2022.

Research Committee Member - SC'2021: The International Conference for High Performance Computing, Networking, Storage and Analysis. SC'2021. St. Lois, Missouri, USA

Technical Program Committee Member – ICSNC 2021: The Sixteenth International Conference on Systems and Networks Communications. ICSNC 2021

Technical Program Committee Member – ICSNC 2021: The Sixteenth International Conference on Systems and Networks Communications. ICSNC 2021, Barcelona, Spain.

Technical Committee Member - SC'2020: The International Conference for High Performance Computing, Networking, Storage and Analysis. SC'2020

Reviewer - Journal of Software: Practice and Experience, Wiley Online Library 2020 - Present.

Reviewer - International Journal of Communication Systems, Wiley Online Library 2020 - Present.

Reviewer - IEEE's Transactions on Services Computing. 2017 - Present.

Session Chair - ICI Symposium. ICI Session 2: Intercloud and IoT 2, (FICLOUD 2017) Prague, Czech Republic, August 2017

Programme Committee Member - The 5th International Conference on Future Internet of Things and Cloud (FICLOUD 2017), Prague, Czech Republic, August 2017.

Reviewer - The 5th International Conference on Future Internet of Things and Cloud (FICLOUD2017), Prague, Czech Republic, August 2017.

Session Chair- ICI Symposium. ICI Session 2: Intercloud and IoT 2, FICLOUD August 2017

Programme Committee Member - 32nd Annual UK Performance Engineering Workshop & Cyber Security Workshop (UKPEW & CyberSecW) – September 2016.
Programme Committee Member - The 4th International Conference on Future Internet of Things and Cloud (FICLOUD 2016), Vienna, Austria, August 2016.

Technical Skills & Area of Expertise

Programming Languages: Python, C, C#, Java, MATLAB, SQL
Databases: SQL, MongoDB, InfluxDB, Postgres, ChromaDB
Packages and Libraries: Langchain, LanGraph, NumPy, SciPy, Pandas, TensorFlow, Keras, Theano, Caffe, PyTorch, NetworkX, PyTorch, SciKit-Learn, CUDA.
Techniques: Retrieval-Augmented Generation (RAG), Deep Learning, Optimization, Data Visualization
General Tools and Platforms: Linux, Git, Shell Scripting
Mathematics: Strong foundation in Engineering Mathematics and Industrial Mathematics, with expertise in Control Systems, Differential Equations, Probabilistic and Statistical Modeling

Artificial Intelligence & Machine Learning:
General AI & ML: Expertise in Generative AI (Gen-AI), Large Language Models (LLM), Large Vision Models (LVM), and Multi-Agent frameworks.
Predictive Modeling & Forecasting: Time Series Forecasting and Statistical Modeling.
Supervised Learning: Classification, Regression, Dimensionality Reduction, Structured Prediction, and Anomaly Detection.
Unsupervised Learning: Clustering (Hierarchical Clustering), Anomaly Detection (Local Outlier Factor), and Incremental Clustering of Large Databases.
Neural Networks: Expertise in Generative Adversarial Networks (GANs) and Reinforcement Learning

References

Available on Request