

KHURSHED ALI

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Research Interests

Machine Learning, Deep Reinforcement Learning, Social Network Analysis, Representation Learning
Data Mining, Health Informatics

EDUCATION

National Tsing Hua University, and Academia Sinica, Taiwan

Sep 2014 - May 2021

Ph.D. in Computer Science

Ph.D. Title: "Learning-based approaches to Tackle Competitive Influence Maximization on Social Networks". During PhD research, I addressed the "Competitive Influence Maximization problem on Time-Constrained, Unknown, and Evolving Social Networks using Reinforcement and Deep Reinforcement Learning-based methods".

Beijing University of Posts and Telecommunications, China

Master of Engineering in Software Engineering

Sep 2011 - Jul 2013

Master's study was focused on Software Engineering, Software Testing, Requirements Engineering, and Network Software Design along with final year research work.

Designed and developed Senior Housing Management System using sipML5, OpenIMS, WebRTC, and HTML5.

Mehran University of Engineering & Technology Jamshoro, Pakistan

Bachelor of Engineering in Software Engineering

Jan 2003 - Dec 2006

Specialized in Software Engineering, actively participated in class term and final semester projects to develop real time applications. Served as a group leader in study projects and in final year project as well.

HONORS & ACHIEVEMENTS

- Awarded ACM SigKDD 2019 Student Travel Award for ACM SigKDD 2019 Conference
- Awarded MOST Taiwan Travel Grant for ACM SigKDD 2019 Conference
- Awarded TIGP PhD Fellowship for PhD Study in Social Networks and Human-Centered Computing at Academia Sinica with affiliation to National Tsing Hua University, Taiwan
- Awarded 2 years Fellowship by China Scholarship Council for study in M.E Software Engineering at Beijing University of Posts and Telecommunications, China

PUBLICATIONS

Journals

1. **Khurshed Ali**, Chih-Yu Wang, Mi-Yen Yeh, and Yi-Shin Chen, "Leveraging Transfer Learning in Deep Reinforcement Learning to Address Competitive Influence Maximization on Unknown Social Networks," (Under Review in Springer Journal on Applied Intelligence)
2. **Khurshed Ali**, Chih-Yu Wang, and Yi-Shin Chen, "Leveraging Transfer Learning in Reinforcement Learning to Tackle Competitive Influence Maximization," (to appear in Springer Journal on KAIS)
3. **Khurshed Ali**, Cheng-Te Li, and Yi-Shin Chen, "Joint Selection of Influential Users and Locations under Target Region in Location-Based Social Networks." MDPI Sensors 21.3 (2021): 709.
4. **Khurshed Ali**, Chih-Yu Wang, and Yi-Shin Chen, "A Novel Nested Q-Learning Method to Tackle Time-Constrained Competitive Influence Maximization," IEEE Access, volume 7, pages 6337 - 6352, December 2018.
5. Memon RA, Li JP, Ahmed J, Nazeer MI, Ismail M, **Khurshed Ali**, "Cloud-based vs. Blockchain-based IoT: a comparative survey and way forward". Frontiers of Information Technology & Electronic Engineering, pages 563-86, April 2020
6. Memon, Q. A., Rahimoon, A. Q., **Khurshed Ali**, Shaikh, M. F., & Shaikh, S. A. "Determining Optimum Tilt Angle for 1 MW Photovoltaic System at Sukkur, Pakistan," International Journal of Photoenergy, 2021.
7. Khurshed Ali, Cheng-Te Li, and Yi-Shin Chen, "A Data-Driven based approach to promote locations with locations-transitions graph under target region in Location-Based Social Networks", (In-submission)

Conferences

1. Khurshed Ali, Chih-Yu Wang, Mi-Yen Yeh, Yi-Shin Chen, and Cheng-Te Li, "NEDRL-CIM: Network Embedding meets Deep Reinforcement Learning to address Competitive Influence Maximization on Evolving Social Networks," IEEE International Conference on Data Science and Advanced Analytics (DSAA), October, 2021.
2. Khurshed Ali, Chih-Yu Wang, Mi-Yen Yeh, and Yi-Shin Chen, "Addressing Competitive Influence Maximization on Unknown Social Network with Deep Reinforcement Learning," International Conference on Advances in Social Networks Analysis and Mining (ASONAM), December 2020.
3. Tzu-Yuan Chung, **Khurshed Ali**, and Chih-Yu Wang, "Deep Reinforcement Learning-based Approach to Tackle Competitive Influence Maximization," ACM SIGKDD Workshop: 15th International Workshop on Mining and Learning with Graphs (MLG'19), Alaska, US, August 2019.
4. Khurshed Ali, Chih-Yu Wang, and Yi-Shin Chen, "Boosting Reinforcement Learning in Competitive Influence Maximization with Transfer Learning," IEEE/WIC/ACM International Conference on Web Intelligence (WI), Santiago, Chile, December 2018.

5. Memon RA, Li J, Ahmed J, Shah F, Nazir I, Ismail M, **Khurshed Ali**, "Simulation and analysis of RSAFE and RSAFE rerouting protocol in network simulator 2", In 14th IEEE International Computer Conference on Wavelet Active Media Technology and Information Processing (ICCWAMTIP), December 2017

RESEARCH EXPERIENCE

Strategic Networking and Communications Laboratory (SNACLab) Aug 2016 – May 2021

I have been working with SNACLab under supervision of Dr. Chih-Yu Wang for my Ph.D. research work at Academia Sinica, Taiwan. During my stay at SNACLab, we had designed and developed novel reinforcement and deep reinforcement learning-based models to address competitive influence maximization on time-constrained, unknown, and evolving social networks.

Networked Artificial Intelligence Laboratory (NetAI Lab) Nov 2015 – July 2016

During initial years of my Ph.D. study, I had worked with Prof. Cheng-Te Li at Academia Sinica. We had addressed joint selection of influential users and locations for viral marketing in location-based social networks.

PROFESSIONAL EXPERIENCE

Lecturer	Oct 2013 – to-date
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Sukkur IBA University, Sukkur, Sindh, Pakistan

I have been working at Sukkur IBA University as a Lecturer since Oct 2013. I have been s a course instructor for Database Management Systems, Formal Methods in Software Engineering, Web Engineering, Object-Oriented Analysis and Design, Software Design and Architecture, and Advance Software Engineering courses during my stay at Sukkur IBA.

Senior Software Engineer **Feb 2011 – Jul 2011**

Creative Chaos Private Limited, Karachi, Pakistan

Worked as a Senior Software Engineer. Designed and developed web-based applications using PHP, HTML, YII, Drupal, Ajax, and jQuery tools.

Senior Software Engineer **Aug 2007 – Jan 2011**

Verge Systems Private Limited, Hyderabad, Pakistan

Started as a software engineer and finally lead a team of five software engineers and analysts. Designed and developed web-based business applications using PHP, HTML, Ajax, jQuery, MySQL. Provided training to clients as well as lead junior software engineer's team.

Trainee Programmer

Jan 2007 – Jun 2007

Ibn-e-Khaldun Systems, Karachi, Pakistan

Worked as a Trainee Programmer. Designed and developed modules of ERP application such as Inventory, Point of Sale, Reports, and Admin modules using PHP, HTML, Ajax, PostgreSQL, and Dojo

PROFESSIONAL PROJECTS

- **Senior Housing Management System using sipML5, WebRTC and HTML5**

My Master degree thesis was on “Design and Implementation of Senior Housing Management System using sipml5, HTML5, WebRTC and OpenIMS”. This project is a systems analysis and design of Senior Housing Management System project for the Beijing Hongfu Hotel Group. The system is a web-based system designed with HTML5 and Open Source technologies like PHP, MySQL. The system front-end is an e-commerce like Web pages designed with HTML5, JQuery and PHP. The system back-end is a senior housing system database designed with MySQL. I have implemented WebRTC and sipML5 with OpenIMS for audio and video communication.

- **UBLFund Manager**

During my professional experience, I had worked on “UBL Fund Manager” project. The objective of this project was to develop a web-based application to assist users and investors to view their transactions and manage funds.

Responsibilities: Requirements collection, Schema designing, ER Diagram, writing user Stories and implementation

Environment: Yii Framework, Apache Web Server, MySQL database, and jQuery

- **Content Management System**

During my experience at Creative Chaos, I had worked on “Content Management System using Drupal”. The objective of this project was to develop a complete web-based CMS system to assist users to manage their profiles and share contents with each other.

Responsibilities: Requirements gathering, Schema designing, ER Diagram, Project Planning, writing user Stories and implementation

Environment: PHP5.0, MySQL, NetBean, Apache, and Drupal

- **WebHR – Human Resource Management System (<http://webhr.co>)**

During my experience at Verge Systems, I had worked on “WebHR- Human Resource Management System”. The objective of the project was to develop a complete web-based HRM Application keeping in mind the requirements of HR Department of an organization. This project is based on Cloud based Social HR Software.

Responsibilities: Requirements collection, Database design, Develop of Recruitment, Employees, Payroll, Training, Reports, Graphs modules of the Project

Environment: PHP5.0, MySQL, Apache, jQuery, LucidCharts, Visual Studio, and VS-PHP

- **BlueCube – Point of Sale System**

BlueCube can be used by any small/medium business to help in recording daily sales and to maintain its inventory level. BlueCube will give your store an edge over all of its competitors by offering a powerful yet easy to use Point of Sale, Accounts, and Inventory Control system.

Responsibilities: Requirements collection, Database design, Implementation

Environment: PHP5.0, MySQL, Apache, jQuery, LucidCharts, Visual Studio, VS-PHP

- **FMS – Financial Management System (<http://www.vergefinancials.com/>)**

The objective of this project was to design and develop complete Financial Management System. This project is developed considering the requirements of Accounts and Finance department of an Organization.

Responsibilities: Requirements collection, Database design, Implementation

Environment: PHP5.0, MySQL, Apache, jQuery, LucidCharts, Visual Studio, VS-PHP

- **IMS – Inventory Management System**

The objective of the project was to assist retailers and shopkeepers to keep track of their assets. The System also facilitates users to maintain vehicle and log book. The task was to implement the Inventory Management System for different companies.

- **MMS – Microfinance Management System**

The objective of the project was to develop complete Microfinance management system. It assists credit officers to enroll daily customer loan process applications, their Payments and view payment schedule due to customers.

Responsibilities: Requirements collection, Database design, Implementation

Environment: PHP5.0, MySQL, Apache, jQuery, LucidCharts, Visual Studio, VS-PHP

- **ERP – Enterprise Resource Planning System**

The objective of the project was to develop a ERP application for a textile industry based at Karachi, Pakistan.

Responsibilities: Design and development of modules for ERP, Query and performance tuning for reports.

Environment: Ubuntu, Postgress SQL, PHP, JavaScript, Dojo, AJAX

SKILLS

Python, Tensorflow, Pytorch, R, C++, PhP, Javascript, AJAX, MySQL, PostGres, Ubunutu, Windows, Visual Studio, Net-Beans, Open-Source PHP Frameworks (YII, CakePHP)

Professional Services

- IEEE TKDE Reviewer
- IEEE Access Reviewer
- Reviewer of Springer Journal on Computer Methods and Applications in Medicine
- ASONAM 2021 PC Members
- ACM SigKDD 2017 Reviewer

- IJCAI 2017 Reviewer

HOBBIES

Reading, Hiking, Badminton, Cycling, Mountain Climbing, Swimming

REFERENCES

References will be furnished on request