

Curriculum vitae

BATJARGAL DOLGORSUREN

PhD (graduated in the spring 2019) at Kyung Hee University, South Korea.

Research Interests: Graph Theory, Streaming/Dynamic Graph, Big Data, Bioinformatics

Graph Compression and Summarization

The research activities in DKE lab are intensively focused in the Graph Compression and Summarization techniques towards graph based data like Social Networks, Transportation Networks, Chemical and Biological compounds etc. My research intentions are to efficiently identify the graph sparsification in a large density graph.

Shortest Paths Computation

In graph theory, we are investigating and developing techniques/algorithms to efficiently compute all kind of Shortest Paths in a graph. Our study is focused to solve the online/offline shortest path problems.

Graph Sparsification

We are working on graph sparsification, constructing cut sparsifiers in undirected graphs weighted subgraphs for which every cut has the same weight as the original graph. We simplify, unify and improve upon previous sparsification results. We are also trying to find out best approach for time evolving community structures in Streaming/Dynamic networks.

IEEE member:



97591311

Personal Data

Date of Birth: December 5th 1988
 Gender: Female
 Marital status: Married
 Religion: Buddhist
 Citizenship: Mongolian
 Permanent Address: - Room # 312, Dept. of Information Technology, SICT-MUST, Bayanzurkh district, 22nd khoroo, Ulaanbaatar, Mongolia
 - Serene town, Bayanzurkh district, 12th khoroo, Ulaanbaatar, Mongolia.

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https://www.researchgate.net/profile/Dolgorsuren_Batjargal

Languages: Mongolian - Mother tongue.
 English - Fluent. (TOEFL ITP score: 540 in 2012)
 Korean – Intermediate (TOPIK II, Level 3)

Hobbies: Reading books and writing poems, surfing on internet,
 Passionate about swimming and singing, travel around the world

Education

- 2019.8 - 2014.3 **Kyung Hee University (GPA: 4.06/4.3)**
 Doctoral Degree in Computer Science; PhD
- 2010 - 2012 **MUST – CSMS /Mongolian University of Science and Technology/**
 Master's Degree in Computer science. (GPA: 3.84/4.0)
- 2006 – 2010 **MUST – CSMS /Mongolian University of Science and Technology/**
 Bachelor of Computer science in Computer science as software engineering (GPA: 3.7/4.0)
- 2004 – 2006 **Dundgobi aimag, Mongolia – 1st secondary school**
 High school graduation diploma
- 1996 – 2004 **Dundgobi aimag, Mongolia – 5th secondary school**

Work Experience

- 2022 Feb 01-
 Up to now **MUST-SICT (School of Communication and Technology), Ulaanbaatar Mongolia**
- Associate professor at Dept. of Information Technology
- 2021 Jan 25-
 2022 Feb 01 **MUST-SICT (School of Communication and Technology), Ulaanbaatar Mongolia**
- Senior Lecturer at Dept. of Information Technology
- 2019 Sep 1-
 2021 Jan 25 **MUST-SICT (School of Communication and Technology), Ulaanbaatar Mongolia**
- Lecturer at Dept. of Information Technology
 - Teaching courses such as “Visual Programing” and “Fundamental of Information System”.
- 2010 Sep 1 -
 2014 Mar 1 **MUST-CSMS (Technology University), Ulaanbaatar Mongolia – Computer science teacher**
- Teaching “Computer simulation” and “Computer ethics and law” course for seven semester to university students in different grades
 - Teaching Web design and Data structure for one semester to university student in first and second grade.
- 2011 Oct. –
 2012 Jan. **Developer - BestSoft LCC, Ulaanbaatar, Mongolia**
 Worked on the project of Telecom Mongolia Company.
 Using Oracle APEX; HTML; CSS
- 2012 May. –
 Jun. **Election Committee – Training teacher**
- Teaching automatic machine of election for supervisor
 - Learn, study, consult a software of election
- 2013 Jun.24 –
 2013 Aug.16 **Training in Cardiff University – Scientific programing, Fortran**
 8 weeks training program

Skills

- Programming software: Visual Studio, VWD, Netbeans, Eclipse etc.
- Project management skills developed because I was working as software developer and system analyst on 2 projects at MUST in Mongolia. *Used technologies: PHP, MySQL Server, MSSQL Server, Apex Oracle;*
- Good written the research paper and scientific studies. Latex
- Web programming in PHP, Zend framework and use web design software through self-study.
- Graph Mining Tools: Giraph, GraphStream, Gephi, Neo4j
- Big Data Tools: R, SPSS, and MapReduce
- Project Management System: Zoho, JIRA

Research Publications

International Journals

- [J-6] Gantsoo Demberel, Temuulen Dorjsuren, Yansen Su, **Dolgorsuren Batjargal** "Heterogeneous graph model for Repurposing Drugs against Echinococcosis" ICT Focus Journal, Volume 1, No 1, 2022.09.01
- [J-5] **Batjargal, D.**, Khan, K.U. and Lee, Y.K., 2019. EM-FGS: Graph sparsification via faster semi-metric edges pruning. Applied Intelligence, pp.1-18.
- [J-4] **Dolgorsuren, B.**, Khan, K.U., Islam, M.S. and Lee, Y.K., 2019. StarZIP: streaming graph compression technique for data archiving. IEEE Access.
- [J-3] Khan, K.U., **Dolgorsuren, B.**, Anh, T.N., Nawaz, W. and Lee, Y.K., 2017. Faster compression methods for a weighted graph using locality sensitive hashing. Information Sciences, 421, pp.237-253.
- [J-2] Khan, K., Alam, A., **Dolgorsuren, B.**, Uddin, M., Umair, M., Sang, U., Duong, V., Xu, W. and Lee, Y.K., 2017. LPA-MI: A Graph-Based Lifestyle Pattern Mining Application Using Personal Image Collections in Smartphones. Applied Sciences, 7(12), p.1200.
- [J-1] Xu, W., Uddin, M., **Dolgorsuren, B.**, Akhond, M., Khan, K., Hossain, M. and Lee, Y.K., 2018. Similarity Estimation for Large-Scale Human Action Video Data on Spark. Applied Sciences, 8(5), p.778.

International Conferences

- [C-10] Ariunaa Uuriintsetseg, **Dolgorsuren Batjargal**, Tseren-Onolt Ishdorj "**Data augmentation technique with SMILES of drugs for machine learning**" International Conference on Computational and Applied Mathematics (ICCAM), Ulaanbaatar, Mongolia 2023-09-23,24
- [C-9] **Dolgorsuren Batjargal**, Ariunaa Uuriintsetseg, Yansen Su, Tseren-Onolt Ishdorj "**In Silico genetic diversity analysis of human Echinococcus granulosus**" 15th International Conference on Frontiers of Information Technology, Applications and Tools, FITAT 2023, Ulaanbaatar, Mongolia 2023-09-14,15,16
- [C-8] **Dolgorsuren Batjargal** "Synergistic drug combination study with multi-omics data integration" International Conference on Applied Science and Engineering, ICASE 2023, Ulaanbaatar, Mongolia 2023-06-16, 17
- [C-7] Thi Thu Van Duong, **Dolgorsuren Batjargal** and Young Koo Lee "**Subgraph Matching on Multiple Graph Streams**" IEEE International Conference on Big Data and Smart Computing, 2022-01-17.
- [C-6] Noorul Amin, Kifayat Ullah Khan, **Batjargal Dolgorsuren** and Young-Koo Lee (Kyung Hee University, Korea "**Extracting Top-K Interesting Information with Weighted Query Semantics**" 2017 IEEE International Conference on Big Data and Smart Computing, 2017.
- [C-5] **Batjargal Dolgorsuren**, Weihua Xu, Kifayat Ullah Khan, Byeong-Soo Jeong and Young-Koo Lee. "**SP2: Spanner construction for Shortest Path computation on Streaming Graph**" The 6th International Conference on Emerging Databases: Technologies, Applications, and Theory; October 17-19, 2016, Jeju Island, Korea. Link
- [C-4] Noorul-Amin, **Batjargal Dolgorsuren**, Kifayat Ullah-Khan, Young-Koo Lee; "**Candidate Generation in Subgraph Search for Knowledge Graph**" BigComp2016.
- [C-3] **Batjargal Dolgorsuren**, Waqas Nawaz, Young-Koo Lee "**Dynamic Taxi Trip Information Management using G* System**" BigDAS2015. ACM International Conference Proceeding; Jeju, Korea, 2015.10.20-23; Link
- [C-2] **Batjargal Dolgorsuren**, Tsend Ganbat, "**Measuring traffic congestion using computer simulation**" International Summer Workshop Computer Science 2013. Chemnitz:Chemnitzer Science; Germany /CSR-13-04/,2013-07-10,4;. Link
- [C-1] **Batjargal Dolgorsuren**, Tsend Ganbat, "**Development of a computer model to calculate statistics about traffic jam**" Strategic Technology (IFOST), 2013 8th International Forum on Volume: 2; DOI: 10.1109/IFOST.2013.6616916, Page(s): 379-379 Link

Domestic Conferences

- [C-23] Т.Түвшинсанаа, Х. Ариунзаяа, Н.Дуламсүрэн, **Б. Долгорсүрэн** "Машин сургалтын DNN+ResNET хосолсон алгоритм ашиглан өвчнийг ангилах нь" ШУТИС-МХТС бакалавр оюутны ЭШХ, Улаанбаатар хот, Монгол улс 2023-11-07
- [C-22] А. Алтанхуяг, **Б. Долгорсүрэн**, И. Цэрэн-Онолт "A multi-omics data integration approach for drug repurposing study" ШУТИС- ийн Эрдмийн чуулган - 2023 Магистр, доктор оюутнуудын ЭШХ, Улаанбаатар хот, Монгол улс 2022.04.19, I байр
- [C-21] А. Алтанхуяг, **Б. Долгорсүрэн**, И. Цэрэн-Онолт "A multi-omics data integration approach for drug repurposing study" ШУТИС-МХТС Эрдмийн чуулган - 2023 Магистр, доктор оюутнуудын ЭШХ, Улаанбаатар хот, Монгол улс 2022.04.01 II байр
- [C-20] Т.Нямдолгор, **Б. Долгорсүрэн** "Blockchain технологийн судалгаа, зарим үр дүн" Магистр, доктор оюутнуудын ЭШХ, Улаанбаатар хот, Монгол улс 2022.11.28
- [C-19] Д. Ганцоож, **Б. Долгорсүрэн** "Эхинококкин ген, уураг, эмийн харилцан үйлчлэлийн граф загвар байгуулах нь" ММТ 2022 ЭШХ, Улаанбаатар хот, Монгол улс 2022.05.13
- [C-18] Б. Анужин, Т.Золбоо, **Б. Долгорсүрэн** "Тэмдэгт танилтын аргуудын харьцуулсан судалгаа" ММТ 2022 ЭШХ, Улаанбаатар хот, Монгол улс 2022.05.13
- [C-17] Д. Ганцоож, **Б. Долгорсүрэн** "Эхинококкин ген, уураг, эмийн харилцан үйлчлэлийн граф загвар байгуулах нь" ШУТИС-МХТС Эрдмийн чуулган - 2022 Магистр, доктор оюутнуудын ЭШХ, Улаанбаатар хот, Монгол улс 2022.04.19
- [C-16] Б. Хулан, **Б. Долгорсүрэн** "Сошиал медиа хэрэглээ, чиг хандлага түүний халдлагуудаас сэргийлэх нь" Цахим, Виртуаль эдийн засаг ба нийгэм-Сорилт ба боломжууд ЭШХ, Улаанбаатар хот, Монгол улс 2022.05.05
- [C-15] **Б. Долгорсүрэн**, Т. Золбоо "Виртуаль нийгмийн оролцогчдыг графын аргаар үнэлэх нь" Цахим, Виртуаль эдийн засаг ба нийгэм-Сорилт ба боломжууд ЭШХ, Улаанбаатар хот, Монгол улс 2022.05.05
- [C-14] Ж. Алтанчимэг, **Б. Долгорсүрэн** "**ШИЙДВЭР ГАРГАЛТАНД ЗОРИУЛЖ ТОРГУУЛИЙН ӨГӨГДӨЛД ДҮН ШИНЖИЛГЭЭ ХИЙХ НЬ**" Цахим үндэстэн ЭШХ, Улаанбаатар хот, Монгол улс 2021.06.17
- [C-13] **Б. Долгорсүрэн** "**Мэдрэлийн эсийн холбоос дээр дүн шинжилгээ хийх нь**" ШУТИС-МХТС Эрдмийн чуулган - 2021 ЭШХ, Улаанбаатар хот, Монгол улс 2021.04.12
- [C-12] Б. Ууганбаяр, **Б. Долгорсүрэн** "**Үндэсний орон зайн өгөгдлийн дэд бүтэц байгуулах судалгаа**" ШУТИС-МХТС бакалавр, магистр оюутны ЭШХ, Улаанбаатар хот, Монгол улс 2020.06.04
- [C-11] Н. Даваадорж, **Б. Долгорсүрэн** "**Ухаалаг утасны спорт заал захиалгын програм хангамж хөгжүүлэлт**" ШУТИС-МХТС бакалавр, магистр оюутны ЭШХ, Улаанбаатар хот, Монгол улс 2020.06.04 (**Шилдэг өгүүлэл 3-р байр**)
- [C-10] Batjargal Dolgorsuren; "**A Social Network Filtering Technology Based On Graph Mining**" INFONET&SEC conference, Улаанбаатар, Монгол улс 2020.01.17
- [C-9] Batjargal Dolgorsuren; "**Нийгмийн сүлжээнд хяналт, шүүлтүүрийн технологи хөгжүүлэх нь**" "**Тоон контент болон нийгмийн сүлжээний эрх зүйн орчин**" сэдэвт эрдэм шинжилгээний хурал - XXMTG, Улаанбаатар, Монгол улс 2019.12.17
- [C-8] **Batjargal Dolgorsuren**, Muhammed Umair Chauhan, Young-Koo Lee; "**A large scale graph processing using Low Latency Optane SSD**" KCC2019, Jeju Island, ICC, South Korea, 2019.06.26-28
- [C-7] Batjargal Dolgorsuren, Young-Koo Lee; "**RDF Ontology Summarization using Bipartite Topology**" KSC2018, Phoenix condo in Pyeongchang, Gangwon Province, South Korea, 2018.12.19-21
- [C-6] Aftab Alam, **Batjargal Dolgorsuren**, Mostafijur Rahman Akhond, Ali, Muhammad Umair, Umair Qudus, Young-Koo Lee; "**Distributed In-memory Granularity-based Time-Series Graph Compression**" KCC2018. ICC, Jeju Island, South Korea, 2018.06.20-22
- [C-5] **Batjargal Dolgorsuren**, Aftab Alam, Kifayat Ullah-Khan, Young-Koo Lee; "**Time-Series Graph Data Partitioning in Spark**" KCC2017. Jeju Island, South Korea, 2017.06.18-20

- [C-4] Batjargal Dolgorsuren, Tsend Ganbat “**Компьютерийн загвар ашиглаж замын түгжрэлийг үнэлэх нь**” ICT Expo - 2013, “Замын хөдөлгөөний аюулгүй байдал, тээврийн хэрэгслийн хөдөлгөөний удирдлага” эрдэм шинжилгээ, онол практикийн бага хуралд “Тэргүүн байр”, 2013-05-21
- [C-3] Batjargal Dolgorsuren, Tsend Ganbat “**Замын хөдөлгөөний статистик гаргах компьютер загвар**” Монголын Мэдээллийн Технологи (ММТ-2013), 2013-04-26
- [C-2] Batjargal Dolgorsuren “**Програм хангамж мэргэжлийн нэр томъёог орчуулахад тулгамдаж буй зарим асуудлууд**” ШУТИС - КТМС Компьютерийн ухааны салбарын багш нарын эрдэм шинжилгээний хурал, 2012-04-01
- [C-1] Batjargal Dolgorsuren “**Компьютерийн ёс зүй ба хууль хичээлийн агуулгыг сайжруулах нь**” Магистр Доктор оюутны эрдэм шинжилгээний хурал - 2011 /ШУТИС - КТМС/,2011-03-30

Patents

- [P-1] Kifayat Ullah-Khan, **Batjargal Dolgorsuren**, Young-Koo Lee; “**METHOD, APPARATUS AND COMPUTER PROGRAM FOR SUMMARIZING OF A WEIGHTED GRAPH**”,가중치 그래프를 요약하는 방법, 장치 및 컴퓨터 프로그램- KIPRIS, 2017, Patent Registration Number: 10-1878213-0000; Application Number:10-2017-0037513; Application Date: 2017. 03. 24; Issue Date: 2018. 07. 13; (Expected) Date of Expiration:2037. 03. 24
- [P-2] LEE, Young Koo, **BATJARGAL DOLGORSUREN**, SEO, Ho Jin “**METHOD AND DEVICE FOR GRAPH SPASIFICATION USING EDGE PRUNNING**” 에지 프루닝을 이용한 그래프 희소화 방법 및 장치” Patent Registration Number: 10-2279323-0000; Application Number: 10-2020-0008620; Application Date: 2020.01.22 ; Issue Date: 2021.07.20; Date of Expiration: 2040. 01. 22

MENTORS

Young-Koo Lee Ph.D. (Professor)

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