THUC DUY LE

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Education

PhD in Bioinformatics (Data Science) – University of South Australia, 2014

B.Sc. in Computer Science – University of South Australia, 2010

M.Sc. in Pure Mathematics – University of Pedagogy, Ho Chi Minh City, Vietnam, 2006

B.Sc. in Pure Mathematics – University of Pedagogy, Ho Chi Minh City, Vietnam, 2002

Academic Honors and Awards

- Early Career Researcher Award, ITEE — 2018
- NHMRC Early Career Fellowship (2017-2020) — 2016
- Ian Davey Thesis Prize for the most outstanding PhD thesis at University of South Australia — 2015
- Early Career Researcher Networking Award to visit the University of Michigan, USA — 2015
- Invited by the SA Governor as an SA emerging scientist to talk to the HRH The Duke of Kent during his visit to Australia — 2015
- EMBL Australia Ph.D. Travel Grant – EMBO Conference Series: "From Functional Genomics to System Biology" in Germany — 2012
- EMBL Germany Travel Scholarship – EMBO Conference Series: "From Functional Genomics to System Biology" in Germany — 2012
- Recipient, University of South Australia Australian Post Graduate Award — 2011-2014
- Travel Grant - Winter School in Mathematical and Computational Biology, Queensland, Australia — 2011
- High Achiever Summer Research Scholarship, University of South Australia — 2010
- University Merit Award, University of South Australia — 2009

- High Achiever Summer Research Scholarship, University of South Australia   2009

- Ranked 1st among graduated students, Mathematics department, University of Pedagogy, Ho Chi Minh City, Vietnam   2006

Research Support Income

- NHMRC Fellowship, 2017-2020, $318K

- ECR Award, 2018, $3K

- UniSA Research Themes Investment Scheme (RTIS), 2018-2020, $80K

- UniSA Project support funding for Fellowship, 2017-2020, $80K

- ITEE division investment funding, 2017, $25K

- Beat the Cancer Travel Grant, SAHMRI, 2017, $2.5K

- ECR Networking Award, UniSA, 2015, $4.7K

- Ian Davey Thesis Prize, UniSA, 2015, $5K

- EMBL Australia and EMBL Germany Travel Grant, 2012, $4K

Publications

Book

1. Jiuyong Li, Lin Liu, and **Thuc Duy Le**, practical approaches to causal relationship exploration, Springer, 2015.

Refereed Journal Articles (Selected)

1. Junpeng Zhang, Lin Liu, and Jiuyong Li, **Thuc Duy Le**,** LncmiRSRN: identification and analysis of long non-coding RNA related miRNA sponge regulatory network in human cancer, ***Bioinformatics***, 2018. Issue: 24, volume: 34, pages: 4232-4240. ** Senior author.

2. Junpeng Zhang, **Thuc Duy Le,** Lin Liu, and Jiuyong Li**,** Inferring and analyzing module-specific lncRNA–mRNA causal regulatory networks in human cancer. ***Briefings in Bioinformatics***, 2018. Published online.

3. Taosheng Xu*, **Thuc Duy Le***, Lin Liu, and Jiuyong Li, CancerSubtypes: an R/Bioconductor package for molecular cancer subtype identification, validation, and visualization, ***Bioinformatics***, 2017. * Co-first authors.

4. Junpeng Zhang*, **Thuc Duy Le***, Lin Liu, and Jiuyong Li, Inferring miRNA sponge co-regulation of protein-protein interactions in human breast cancer. ***BMC Bioinformatics***, 2017.

5. Weijia Zhang, **Thuc Duy Le**, Lin Liu, Zhihou Zhou, and Jiuyong Li, Mining heterogenous causal effects for personalized cancer treatment, ***Bioinformatics***, 2017.

6. Huawen Liu, Lin Liu, **Thuc Duy Le**, Ivan Lee, Shiny Sun, Jiuyong Li, Non-Parametric sparse matrix decomposition for cross-view dimensionality reduction, ***IEEE Transactions on Multimedia***, 2017.

7. Junpeng Zhang*, **Thuc Duy Le***, Lin Liu, and Jiuyong Li, Identifying miRNA sponge modules using biclustering and regulatory scores, ***BMC Bioinformatics***, 2017, 18(3), 44

8. Jiuyong Li, Saisai Ma, **Thuc Duy Le**, Lin Liu, and Jiexiu Liu, Causal decisions trees, ***IEEE Transactions on Knowledge and Data Engineering***, 2017, 29 (2), 257-271

9. **Thuc Duy Le***, Junpeng Zhang*, Lin Liu, Jiuyong Li, Computational methods for identifying miRNA sponge interactions, ***Briefings in Bioinformatics***, 2016, doi: 10.1093/bib/bbw042. (Impact factor: 9.617)

10. Weijia Zhang, **Thuc Duy Le**, Li Liu, Zhi-Hua Zhou, Jiuyong Li, predicting miRNA targets by integrating gene regulatory knowledge with expression profiles, ***Plos One*** (2016). (Impact factor: 3.53)

11. Taosheng Xu*, **Thuc Duy Le***, Lin Liu, Rujing Wang, Binyu Sun, and Jiuyong Li, identifying cancer subtypes from miRNA-TF-mRNA regulatory networks and expression data, ***Plos One***, 2016, 11 (4), e0152792. DOI: 10.1371/journal.pone.0152792. (Impact factor: 3.53). (* co-first authors)

12. S.M Masud Karim, Lin Liu, **Thuc Duy Le**, Jiuyong Li, Identification of miRNA-mRNA regulatory modules by exploring collective group relationships, ***BMC Genomics***, 2016, 17(Suppl 1):7 DOI: 10.1186/s12864-015-2300-z. (Impact factor: 3.99)

13. Saisai Ma, Jiuyong Li, Lin Liu, **Thuc Duy Le**, Mining Combined Causes, ***Knowledge-Based Systems***, Volume 92, 2016. (Impact factor: 3.058)

14. Junpeng Zhang, **Thuc Duy Le**, Lin Liu, Jianfeng He, Jiuyong Li, A novel framework for inferring condition-specific TF and miRNA co-regulation of protein–protein interactions, ***Gene,*** Volume 577 Issue 1, 2016. (Impact factor: 2.1)

15. Junpeng Zhang, **Thuc Duy Le**, Lin Liu, Jianfeng He, Jiuyong Li, Identifying miRNA synergistic regulatory networks in heterogeneous human data via network motifs, ***Molecular BioSystems***, 2016, DOI: 10.1039/C5MB00562K. (Impact factor: 3.21)

16. **Thuc Duy Le**, Junpeng Zhang, Lin Liu, Huawen Liu, Jiuyong Li, miRLAB: An R Based Dry Lab for Exploring miRNA-mRNA Regulatory Relationships, ***PLOS ONE***, 2015, 10(12): e0145386. DOI: 10.1371/journal.pone.0145386. (Impact factor: 3.53)

17. **Thuc Duy Le**, Junpeng Zhang, Lin Liu, Jiuyong Li, Ensemble methods for miRNA target prediction from expression data, ***PLOS ONE***, Volume 10, Issue 6, e0131627, 26 June 2015. (Impact factor: 3.53)

18. Jiuyong Li, **Thuc Duy Le**, Lin Liu, Jixue Liu, Zhou Jin, Bingyu Sun, Saisai Ma, From Observational Studies to Causal Rule Mining, ***Transactions on Intelligent Systems and Technology***, 2015 (Impact factor: 9.39)

19. **Thuc Duy Le**, Lin Liu, Junpeng Zhang, Bing Liu, Jiuyong Li, from miRNA regulation to miRNA-TF co-regulation: computational approaches and challenges, Briefings in Bioinformatics, 2015, doi: 10.1093/bib/bbu023. (Impact factor: 5.919)

20. Junpeng Zhang, **Thuc Duy Le**, Lin Liu, Jiuyong Li, inferring condition-specific miRNA activity from matched miRNA and mRNA expression data, ***Bioinformatics***, July 23, 2014 doi:10.1093/bioinformatics/btu489. (Impact factor: 4.68, ERA Journal: A*)

21. Junpeng Zhang*, **Thuc Duy Le***, Lin Liu, Bing Liu, Jianfeng He, Gregory J Goodall, Jiuyong Li, identifying direct miRNA-mRNA causal regulatory relationships in heterogeneous data, ***Journal of Biomedical Informatics***, 2014. (Impact factor: 2.46). (* co-first authors)

22. **Thuc Duy Le**, Lin Liu, Bing Liu, Anna Tsykin, Gregory J. Goodall, Kenji Satou, Jiuyong Li, Inferring microRNA and transcription factor regulatory networks in heterogeneous data, ***BMC Bioinformatics***, 11 March 2013, 14: 92. (Impact factor: 3.02, ERA Journal: A)

23. **Thuc Duy Le**, Lin Liu, Anna Tsykin, Gregory J. Goodall, Bing Liu, Bing-Yu Sun, Jiuyong Li, Inferring microRNA-mRNA causal regulatory relationships from expression data, ***Bioinformatics***, Volume 29, Issue 6, 30 January 2013, Pages 765-771. (Impact factor: 5.323, ERA Journal: A*)

Refereed Conference Proceeding Papers (Selected)

1. **Thuc Duy Le** et al., ParallelPC: an R package for efficient constraint based causal exploration. ***PAKDD Workshop***, 2018

2. S.M. Masud Karim, Lin Liu, Thuc Duy Le, Jiuyong Li, Identification of miRNA-mRNA regulatory modules by exploring collective group relationships, ***Asia Pacific Bioinformatics Conference (APBC 2016)***, 2016.

3. **Thuc Duy Le**, Tao Hoang, Jiuyong Li, Lin Liu, Huawen Liu, A Fast PC Algorithm for High Dimensional Causal Discovery with Multi-core PCs, ***14th International Workshop on Data Mining in Bioinformatics (BIOKDD'15)***, 2015.

4. Jiuyong Li, **Thuc Duy Le**, Lin Liu, Jixue Liu, Zhou Jin, and Bingyu Sun, Mining Causal Association Rules, ***The First IEEE ICDM Workshop on Causal Discovery (CD 2013)***, 2013.

5. Zhou Jin, Jiuyong Li, Lin Liu, **Thuc Duy Le**, Bingyu Sun, Rujing Wang, Discovery of Causal Using Partial Association, ICDM, ***IEEE 12th International Conference on Data Mining***, December 2012, Pages 309-318. (ERA Conference: A, Core Conference: A*)

Invited Keynote and speaker addresses (Selected)

1. Invited talk at RNA Special Interest Group, Adelaide, *identifying miRNA-mRNA causal effects*, 2012.
2. Invited talk at Ye's lab, University of Michigan, *Causal inference methods in bioinformatics*, 2015.
3. Invited talk at University of Hanoi University Education, *Causal inference methods and personalized medicine*, 2016.
4. Invited talk at Vietnam National University of IT, *Causal inference and cancer subtype discovery*, 2016.
5. Invited talk at HoChiMinh City University of Pedagogy, *Data mining and applications in bioinformatics*, 2016.

Identifiable benefits outside of academia

1. I and other research assistant/visiting students have developed a number of bioinformatics software tool packages for discovering gene regulatory relationships and cancer subtypes. We have made available these tools freely to public, especially for biologists and bioinformaticians, including:

   a. miRLAB,

      https://www.bioconductor.org/packages/3.3/bioc/html/miRLAB.html.

   b. CancerSubtypes,

      https://bioconductor.org/packages/release/bioc/html/CancerSubtypes.html

   c. miRsponge,

      https://bioconductor.org/packages/release/bioc/html/miRsponge.html

   d. miRBaseConverter,

      http://bioconductor.org/packages/release/bioc/html/miRBaseConverter.html

   e. CRE, Causal Relationship Explorer, http://nugget.unisa.edu.au/Causalbook/

   f. ParallelPC, https://cran.r-project.org/web/packages/ParallelPC/index.html

Professional Services

Editorial Services

- Academic Editor for Plos One

Conference/Workshop organisations

- Board member to organize BioInfoSummer 2016, the flagship event of Bioinformatics research in Australia.

- Key organizer of Causal Discovery workshop (CD18) at KDD'18

Program committee member of:

- InCoB 2017, PAKDD 2018, AAAI 2018, PAKDD 2019

- KSE2014

- Causality Discovery Workshop, KDD2016.

Paper reviewer for (selected):

- Plos Computational Biology

- Bioinformatics

- IEEE Transactions on Knowledge and Data Engineering (TKDE)

- ACM Transactions on Intelligent Systems and Technology (ACM TIST)

- Annals of Medicine

- Artificial Intelligence in Medicine

- Plos ONE

- Briefings in Bioinformatics

- BMC Bioinformatics

Community service:

- Organise the fund raising campaign (Movember) to support cancer research

- NHMRC Grant reviewer

- HDR Thesis examiner.

Memberships

- Golden Key International Honour Society

- Australian Bioinformatics Network

- ACM professional member

- ACM SIG-Bioinformatics member

- IEEE professional member

References

1. Professor Jiuyong Li, Associate Head of Research Education, School of Information Technology and Mathematical Sciences, University of South Australia.
   Email: Jiuyong.Li@unisa.edu.au
   Tel: +61883023898

2. Professor Greg Goodall, Head, Gene Regulation Section, Centre for Cancer Biology, SA Pathology.
   Email: Greg.Goodall@health.sa.gov.au
   Tel: +61882223430

3. A/Professor Lin Liu, School of Information Technology and Mathematical Sciences, University of South Australia.
   Email: Lin.Liu@unisa.edu.au
   Tel: +61883023311