BANG TRAN

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RESEARCH INTERESTS

- **Bioinformatics**: cancer subtyping, single-cell RNA sequencing data analysis, pathway analysis, multi-omics data integration, meta-analysis, cancer risk prediction, cancer survival prediction.
- **Machine learning**: unsupervised and supervised learning, deep neural network, big data analytics.

EDUCATION

Ph.D., Computer Science, University of Nevada Reno — Reno, Nevada
- Major: Bioinformatics — July 2023
- Advisor: Dr. Tin Nguyen
- Tentative Thesis Proposal Defend: Spring, 2023
- Tentative Thesis Final Defend: Fall, 2023

MS Information and Communication Technology for Embedded Systems,

Thammasat University — Rangsit, Thailand

Tokyo Institute of Technology (Tokyo Tech) — Tokyo, Japan
- Major: Natural Language Processing — May 2017
- Advisors: Dr. Virach Sornlertlamvanich and Dr. Takenobu Tokunaga

B.S.E., Information and Communication Technology, Asian Institute of Technology

Rangsit, Thailand
- Major: Information and Communication Technology — May 2014
- Thesis Advisors: Dr. Mongkol Ekpanyapong and Dr. Manukid Parnichkun

PROFESSIONAL APPOINTMENT

Assistant Professor (*August 2023 – Current*), Department Of Computer Science, California State University, Sacramento, California, USA

Graduate Research Assistant/Teaching Assistant (*August 2018 – August 2023*), Department of Computer Science and Engineering, University of Nevada, Reno, Nevada, USA

IT Manager (*June 2017 – July 2018*), Prior Solution, Bangkok, Thailand

Software Developer (*Nov 2016 – March 2017*), Magnecomp Precision Technology PCL – TDK Corporation, Pathumthani, Thailand

Graduate Research Assistant/Teaching Assistant *(August 2015 – May 2017)* Department of Information and Communication Technology, Thammasat University, Thailand

PUBLICATIONS

Journal Articles

J.1. **Bang Tran**, Duc Tran, Hung Nguyen, Seungil Ro, and Tin Nguyen. scCAN: single-cell clustering using autoencoder and network fusion. **Nature Scientific Reports**, DOI: 10.1038/s41598-022-14218-6, 2022. *[impact factor: 5.0, h-index: 242, h5-index: 206]*

J.2. Duc Tran, **Bang Tran**, Hung Nguyen, and Tin Nguyen. A novel method for single-cell data imputation using subspace regression. **Nature Scientific Reports,** DOI: 10.1038/s41598-022-06500-4, 2022. *[impact factor: 5.0, h-index: 242, h5-index: 206]*

J.3. Hung Nguyen, Duc Tran, **Bang Tran**, Monikrishna Roy, Adam Cassell, Sergiu Dascalu, Sorin Draghici, and Tin Nguyen. SMRT: Randomized Data Transformation for Cancer Subtyping and Big Data Analysis. **Frontiers in Oncology**, DOI: 10.3389/fonc.2021.725133, 2021. *[impact factor: 5.7, h-index: 102, h5-index: 99]*

J.4. Duc Tran, Hung Nguyen, **Bang Tran**, Carlo La Vecchia, Hung N. Luu, and Tin Nguyen. Fast and precise single-cell data analysis using hierarchical autoencoder. **Nature Communications***,* DOI: 10.1038/s41467-021-21312-2, 2021. *[impact factor:17.7, h-index: 410, h5-index: 307]*

J.5. Hung Nguyen, Duc Tran, **Bang Tran**, Bahadir Pehlivan, and Tin Nguyen. A comprehensive survey of regulatory network inference methods using single-cell RNA sequencing data. **Briefings in Bioinformatics**, DOI: 10.1093/bib/bbaa190, 2021. *[impact factor: 14.0, h-index: 121, h5-index: 85]*

J.6. **Bang, Tran Sy** and Virach Sornlertlamvanich. Sentiment classification for hotel booking review based on sentence dependency structure and sub-opinion analysis. **IEICE Transactions on Information and Systems**, DOI: 10.1587/transinf.2016IIP0038, 2018. *[Impact factor: 0.84, h-index: 50].*

Peer-Reviewed Conferences Proceedings

C.1. **Bang Tran**, Quyen Nguyen, Sangam Shrestha, and Tin Nguyen. scIDS: Single-cell Imputation by combining Deep autoencoder neural networks and Subspace regression*. In 2021 13th International Conference on Knowledge and Systems Engineering (KSE),* 2021.

C.2. Duc Tran, Frederick C. Harris, **Bang Tran**, Nam Sy Vo, Hung Nguyen, and Tin Nguyen. Single-Cell RNA Sequencing Data Imputation Using Deep Neural Network. *In ITNG 2021 18th International Conference on Information Technology-New Generations*, 2021.

C.3. Hung Nguyen, **Bang Tran**, Duc Tran, Quang-Huy Nguyen, Duc-Hau Le, and Tin Nguyen. Disease subtyping using community detection from consensus networks. *In 2020 12th International Conference on Knowledge and Systems Engineering (KSE)*, 2020.

C.4. **Bang Tran**, Duc Tran, Hung Nguyen, Nam Sy Vo, and Tin Nguyen. RIA: a novel Regression based Imputation Approach for single-cell RNA sequencing. *In Proceedings of the 11th IEEE International Conference on Knowledge and Systems Engineering (KSE),* 2019.

C.5. **Bang, Tran Sy**; Choochart Haruechaiyasak; and Virach Sornlertlamvanich. Vietnamese Online Hotel Reviews Classification Based on Term Features Selection. *26th International Conference on Information Modelling and Knowledge Bases (EJC) 2016*.

C.6. **Bang, Tran Sy**; Choochart Haruechaiyasak; and Virach Sornlertlamvanich. Vietnamese sentiment analysis based on term feature selection approach. *In Proceedings of the 10th International Conference on Knowledge Information and Creativity Support Systems (KICSS),* 2015.

SOFTWARE

- scCAN: Single-Cell Clustering using Autoencoder and Network Fusion (number of downloads: 5,450)
  https://CRAN.R-project.org/package=scCAN

- scISR: Single-Cell Imputation using Subspace Regression (number of downloads: 880)
  https://cran.r-project.org/package=scISR

- scDHA: Single-Cell Decomposition using Hierarchical Autoencoder (number of downloads: 6,251)

  https://CRAN.R-project.org/package=scDHA

- PINSPlus: Clustering Algorithm for Data Integration and Disease Subtyping. (number of downloads: 26,367)
  https://CRAN.R-project.org/package=PINSPlus

WORKING EXPERIENCE

Software Developer at Magecomp Precision Technology

Rangsit, Thailand

– Defect detection using computer vision — May 2016 – May 2017

Software Developer at Prior Solution

Bangkok, Thailand

– Website developer for Ministry of Labour, Thailand — May 2017 – July 2018

MEDIA COVERAGE

- New tool allows computer scientists to support life scientists
  https://www.unr.edu/nevada-today/news/2021/computer-scientists-support-life-scientists

- The method scCAN is in the news of the Journal of Science and Development, Vietnamese Ministry of Science
  https://khoahocphattrien.vn/khoa-hoc/mo-hinh-hoc-sau-sccan-hieu-qua-hon-trong-phan-loai-benh-nhan-ung-thu/20220825104633563p1c160.htm

AWARDS AND HONORS

- **Third prize** for graduate students in NV NASA Programs 2021 Virtual Poster Competition. https://nasa.epscorspo.nevada.edu/2021-virtual-poster-competition/
- **First prize** for graduate students in NV NASA Programs 2020 Virtual Poster Competition. https://nasa.epscorspo.nevada.edu/2020-virtual-poster-competition/.
- **Runners up** for graduate students in NV NASA Programs 2020 Virtual Poster Competition. https://nasa.epscorspo.nevada.edu/2020-virtual-poster-competition/.
- **Best paper** in Proceedings of the 11th IEEE International Conference on Knowledge and Systems Engineering, 2019. https://drive.google.com/file/d/13wfrFxBtf4impEq9-vuI4L3L3Pj3NKtB/view?usp=sharing
- **Suyama Scholarship**, 2014. https://drive.google.com/file/d/0B4lbYhXSaCz8UnlsbjFmdlVFMDg/view?usp=sharing&resourcekey=0-QwDnOHDhhwemVttU-8mV0g
- **TAIST Tokyotech Scholarship** Master Scholarship that covers the entire cost for 2 years of graduate study, 2014
- **Thanh Hoa People Committee Scholarship for Excellent Students in Viet Nam** to cover the entire cost of undergraduate study for 4 years at the Asian Institute of Technology, 2010. Best student in National Entrance Examination.

PROFESSIONAL COLLABORATION

- **Cloud-based educational module for consensus pathway analysis**
  Collaborators: The National Aeronautics and Space Administration (NASA), National Institutes of Health (NIH), and Google Cloud Engineering Team.
  Project website: https://storage.googleapis.com/nosi-gcloud-course/html/intro.html

- **Data Mine Program at Purdue University**
  Project website https://datamine.purdue.edu/

TEACHING

California State University, Sacramento

- CSC 138-Computer Networks (Fall 2023)

University of Nevada, Reno

- CPE 301 Embedded Systems Design (Spring 2020, Fall 2020, Sprint 2021, Fall 2021, Spring 2022)
- CS365 Mathematics of Computer Science (Fall 2020)
- CPE 201 Digital Design (Fall 2019)
- CS 445 / 645 Internet Security (Spring 2018)
- ENGR100 Introduction to Engineering Design (Fall 2018)

Thammasat University

- ITS100 Introduction to Computers and Programming (Fall 2015, Spring 2016)
- CSS334 Computer Networks and Internetworking

PROFESSIONAL SERVICE

Journals Reviewer

- Bioinformatics Advances Journal (Oxford University Press).
- Computational and Structural Biotechnology Journal (Elsevier)

Conferences Reviewer

- The 4th International Conference on Machine Learning and Intelligent Systems– MLIS022.
- The Sixth International Conference on Biological Information and Biomedical Engineering – BIBE2022.
- International Conference on Bioinformatics and Computational Biology – BICOB2019, BICOB2020, BICOB2022.
- IEEE International Conference on Knowledge and Systems Engineering – KSE2019, KSE 2020, KSE 2021, KSE 2023.

Conference Organization

- Mathematical and Computational Oncology: First International Symposium, ISMCO 2019, Lake Tahoe, NV, USA, October 14–16, 2019.