Publications and Activities
Daisuke TOMINAGA
September 1, 2023

1. Paper

[Journal paper, peer reviewed, first author]
- "Linear and Nonlinear Regression for Combinatorial Optimization Problem of Multiple Transgenesis", Daisuke Tominaga, Kazuki Mori, Sachiyo Aburatani, IPSJ Transactions on Bioinformatics, Vol. 9, pp. 7-11, 2016.3.
- "Statistical stage transition detection method for small sample gene expression time series data", Daisuke Tominaga, Mathematical Biosciences, Vol. 254, pp. 58-63, 2014.7.
- "Periodicity detection method for small-sample time series datasets", Daisuke Tominaga, Bioinformatics and Biology Insights, Vol. 4, pp. 127-136, 2010.11.
- "Judgment Algorithm for Periodicity of Time Series Data based on Bayesian Information Criterion", Daisuke Tominaga, Katsuhisa Horimoto, Journal of Bioinformatics and Computational Biology, Vol. 6, No. 4, pp 747-757, 2008.8.
- "High-throughput Automated Image Processing System for Cell Array Observations", Daisuke Tominaga, Fukumi Iguchi, Katsuhisa Horimoto, Yutaka Akiyama, IPSJ Transactions on Bioinformatics, Vol. 48, No. SIG 17(TBIO 3), pp. 1-7, 2007.11.
- "Inference of Scale-free Networks From Gene Expression Time Series", Daisuke Tominaga, Paul Horton, Journal of Bioinformatics and Computational Biology, Vol. 4, No. 2, pp. 503-514, 2006.4.

[Journal paper, peer reviewed, corresponding author]
- "Estimate hidden dynamic profiles of siRNA effect on apoptosis", Takanori Ueda, Daisuke Tominaga, Noriko Araki, Tomohiro Yoshikawa, BMC Bioinformatics, vol. 14, 97, 2013.3.

[Journal paper, peer reviewed, co-author]
- "Rapid Quantification of Microvessels of Three-Dimensional Blood–Brain Barrier Model Using Optical Coherence Tomography and Deep Learning Algorithm", Huiting Zhang, Dong-Hee Kang, Marie Piantino, Daisuke Tominaga, Takashi Fujimura, Noriyuki Nakatani, J. Nicholas Taylor , Tomomi Furihata, Michiya Matsusaki, Satoshi Fujita, Biosensors, 13, 818, https://doi.org/10.3390/bios13080818, 2023.8.
- "Cortical transcriptome analysis after spinal cord injury reveals the regenerative mechanism of central nervous system in CRMP2 knock-in mice", Ayaka Sugeno, Wenhui Piao, Miki Yamazaki, Kiyofumi Takahashi, Koji Arikawa, Hiroko Matsunaga, Masahito Hosokawa, Daisuke Tominaga, Yoshio Goshima, Haruko Takeyama, Toshio Ohshima, Neural Regeneration Research, vol. 16(7), 1258-1265, 2020.12.
- "MFSPSSMpred: identifying short disorder-to-order binding regions in disordered proteins based on contextual local evolutionary conservation", Chun Fang, Tamotsu Noguchi, Daisuke Tominaga and Hayato Yamana, BMC Bioinformatics, vol. 14, 300, 2013.10.
- "Two-way AIC: detection of differentially expressed genes from large scale microarray meta-dataset", Koki Tsuyuzaki, Daisuke Tominaga, Yeondae Kwon, Satoru Miyazaki, BMC Genomics, vol. 14(Suppl 2), S9, 2013.2.
- "Dynamic modeling of genetic networks using genetic algorithm and S-system", Shinich Kikuchi, Daisuke Tominaga, Masanori Arita, Katsutoshi Takahashi, Masaru Tomita, Bioinformatics, vol. 19, No. 5, pp. 643-650, 2003.3.

- "Detecting outlying samples in microarray data: A critical assessment of the effect of outliers on sample classification", Koji Kadota, Daisuke Tominaga, Yutaka Akiyama, Katsutoshi Takahashi, CBI Journal, Vol. 3, No. 1, pp. 30-45, 2003.7.
- "Nonlinear Numerical Optimization with Use of a Hybrid Genetic Algorithm Incorporated the Modified Powell Method", Masahiro Okamoto, Taisuke Nonaka, Shuichiro Ochiai, Daisuke Tominaga, Applied Mathematics and Computation, Vol. 91, pp. 63-72 1998.
- "Design of Virtual-Labo-System for Metabolic Engineering: Development of Biochemical Engineering System Analyzing Tool-KIT(BEST-KIT)", Masahiro Okamoto, Yoshimitsu Morita, Daisuke Tominaga, Kouji Tanaka, Noriaki Kinoshita, Jun-Ichi Ueno, Yuichi Miura, Yukihiro Maki, Yukihiro Eguchi, Computers Chemical Engineering, Vol. 21, S745-S750, 1997.

[Conference proceedings, peer reviewed, first author]
- "Analysis of network dynamics including hidden variables by symbolic-numeric approach", Daisuke Tominaga, Yasuhito Tokumoto, Masahiko Nakatsui, Fuyan Sun, Jun Miyake, Katsuhisa Horimoto, Proceedings of the 2nd International Symposium on Optimization and Systems Biology, pp. 243-248, 2008.10.
- "Symbolic approach for dynamical analysis of biological network modules", Daisuke Tominaga, Katsuhisa Horimoto, The 11th World Multi-Conference on Systemics, Cybernetics and Informatics Proceedings, Vol. 4, pp. 25-29, 2007.7
- "Development of automated image processing procedure for cell-arrays", Daisuke TOMINAGA, Fukumi Iguchi, Yutaka Akiyama, Katsuhisa HORIMOTO, The 11th World Multi-Conference on Systemics, Cybernetics and Informatics Proceedings Vol. 4, pp. 19-24, 2007.7
- "Non-Arbitrary Judgment Algorithm for Periodicity of Time Series", Daisuke Tominaga, Paul Horton, The 10th World Multi-Conference on Systemics, Cybernetics and Informatics Proceedings, Vol. 4, pp. 17-22, 2006.7.
- "Distributed Genetic Algorithm for Inference of Biological Scale-Free Network Structure", Daisuke Tominaga, Katsutoshi Takahashi, Yutaka Akiyama, High Performance Computing, LNCS 2858, No. 214, pp. 214-221, 2003.10.
- "Efficient Numerical Optimization Algorithm Based on Genetic Algorithm for Inverse Problem", Daisuke Tominaga, Nobuto Koga, Masahiro Okamoto, Proceedings of Genetic and Evolutionary Computation Conference (GECCO 2000), pp. 252 - 258, 2000.
- "Inference Algorithm for Interaction Mechanism in Genetic Network Using Experimentally Observed Time-course Data", Daisuke Tominaga, Masahiro Okamoto, Yukihiro Maki, Shoji Watanabe, Yukihiro Eguchi, Proceedings of the 2nd International Workshop on Advanced Genomics, Vol. 1, pp. 76-76, 1999.
- "Nonlinear Numerical Optimization Technique Based on a Genetic Algorithm for Inverse Problems: Towards the Inference of Genetic Networks", Daisuke Tominaga, Masahiro Okamoto, Yukihiro Maki, Shoji Watanabe, Yukihiro Eguchi, Proceeding of German Conference on Bioinformatics '99, pp. 127-140, 1999.
- "Inference Algorithm for Interaction Mechanism in Genetic Network Using Experimentally Observed Time-course Data", Daisuke Tominaga, Masahiro Okamoto, Yukihiro Maki, Shoji Watanabe, Yukihiro Eguchi, Proceedings of the 2nd International Workshop on Advanced Genomics, Vol. 1, pp. 76-76, 1999.
- "Design of Canonical Model Describing Complex Nonlinear Dynamics", Daisuke Tominaga, Masahiro Okamoto, Proceeding of 7th International Conference on Computer Applications in Biotechnology, pp. 85-90, 1998.
- "Discovery of a Skeletal Network Describing Complex Nonlinear Dynamics: Optimized Essential Model for Temporal Input-Output Matching", Daisuke Tominaga, Jun-Ichi Ueno,

Yuichi Miura, Masahiro Okamoto, In: Proceedings of fourth International Conference on Soft Computing (Iizuka '96), Tutorials, Vol. 2, pp. 65-80, World Scientific, New Jersey, 1996.

[Proceedings, peer reviewed, not as a first author]
- "Development of a System for the Inference of Large Scale Genetic Networks", Yukihiro Maki, Daisuke Tominaga, Masahiro Okamoto, Shoji Watanabe, Yukihiro Eguchi, Proceedings of Pacific Symposium on Biocomputing 2001 (PSB2001) pp. 446-458, 2001.
- "Towards a System for the Inference of Large Scale Genetic Networks: Efficient Numerical Optimization Algorithm Based on Genetic Algorithm for Inverse Problem", Masahiro Okamoto, Daisuke Tominaga, Nobuto Koga, Yukihiro Maki, Shoji Watanabe, Yukihiro Eguchi, IPSJ Symposium Series, Vol. 2000, No. 5, pp. 29-37, 2000.
- "Toward a Virtual-Labo-System for Metabolic Engineering: Development of Biochemical Engineering System Analyzing Tool-KIT(BEST-KIT)", Masahiro Okamoto, Yoshimitsu Morita, Daisuke Tominaga, Kouji Tanaka, Noriaki Kinoshita, Jun-Ichi Ueno, Yuichi Miura, Yukihiro Maki, Yukihiro Eguchi, Proceeding of Pacific Symposium on Biocomputing '97 (ed. by R.B. Altman, A.K. Dunker, L. Hunter, T.E. Klein, World Scientific, New Jersey, pp. 304-315, 1997.1.
- "Nonlinear Numerical Optimization with Use of a Hybrid Genetic Algorithm Incorporated the Modified Powell Method", Masahiro Okamoto, Taisuke Nonaka, Shuichiro Ochiai, Daisuke Tominaga, Proceedings of International Symposium on Artificial Life and Robotics, pp. 89-92, 1996.

2. Book Editor
- The 11th World Multi-Conference on Systemics, Cybernetics and Informatics Proceedings, 2007.7, International Institute of Informatics and Systemics

3. Award
- 2007 SIGBIO Best Paper Award, Daisuke Tominaga, Fukumi Iguchi, Yutaka Akiyama, Katsuhisa Horimoto, "High-throughput Automated Image Processing System for Cell Array Observations", IPSJ Transactions on Bioinformatics, Vol. 48, No. SIG17 (TBIO 3), 1-8, 2007, December 17, 2008.

4. Patent
- Periodicity judgment apparatus, periodicity judgment method, and periodicity judgment program (US_11/374977, 2006.3.15)

5. Project
- Basic Science and Platform Technology Program for Innovative Biological Medicine, Japan Agency for Medical Research and Development, 2014.7 - current.
- Development of high functional genome design technology for innovative biomaterials, as a member of METI committed research project, 2013.7 - current.
- Gene expression and pathway analysis on mouse for assessment of micro-gravity effect, as a member of Japan Association for Pharmaceutical Uses of outer Space, 2012.6 - current.
- Gene expression and pathway analysis on methylotrophic yeast, as a member of the strategic alliance of Daiichi-Sankyo pharmaceutical and AIST, 2014.4 - 2015.3.

- Data security for big-data mining, collaboration research with Thymos TechnoLogic, inc., 2012.4 - 2013.3.
- Development of introducing system for human iPS cells, as a member of METI committed research project, 2011.7 - 2012.2.
- Mathematical model analysis for quantitative evaluation of siRNA, collaboration research with CytoPathfinder, inc., 2011.11 - 2013.3.
- Development for gene function analysis technology with cell-array, as a member of NEDO committed research project, 2005.7 - 2010.3.
- Development of Integration of Cell/Tissue Information, as a member of collaboration research by Cell Engineering Research Institute, Gene Function Research Laboratory, Research Center for Glycoscience and New Carbon Material Research Center. 2003.4-2005.3.

6. Software
- Daisuke TOMINAGA, Paul HORTON, "clarinets - Cell Array Informatics for Network Analysis on Quantitative Gene Expression Time Series Data", http://seqx01.cbrc.jp/clarinets/, 2590720 bytes, 2005.3.15
- Daisuke TOMINAGA, Masahiro OKAMOTO, "sAnalysis - system dynamics analyzer for the S-system", http://helios.brs.kyushu-u.ac.jp/~tominaga/sAnalysis/sAnalysis.html, 8939520 bytes, 2003.7.25

7. Professional experience
[Researcher carrier]
- Senior Staff Scientist, National Institute of Advanced Industrial Science and Technology, 2014.4.1 - current
- Staff Scientist, National Institute of Advanced Industrial Science and Technology, 2001.4.1 - 2014.3.31

[Educational carrier]
- Visiting professor, Waseda University, 2016.4 - current.
- Part-time lecturer, Shibaura Institute of Technology, 2013.4.1 - current
- Part-time lecturer, Meiji Pharmaceutical University, 2012.4.1 - current
- Part-time lecturer, Graduate School of the University of Tokyo, 2011.
- Visiting associate professor, Waseda University, 2009.11 - 2016.3.
- Part-time lecturer, Graduate School of Tokyo Medical and Dental University, 2008.4.1-2012.3.31.
- Part-time lecturer, Graduate School of the University of Tokyo, 2007.
- Part-time lecturer, Graduate School of Kumamoto University, 2004.7.1-2006.3.31.

8. Social activity
[Local Committee]
- CBRC System administrator, 2007.4-
- CBRC IT Security committee, member, 2006.4-
- AIST waterfront site security team for general disaster, staff, 2006.4-
- CBRC disaster security committee, fire alarm team, member, 2006.4-
- CBRC Librarian committee, member, 2003.4-
- CBRC Network committee, member, 2002.4-2003.3.
- CBRC Infrastructure committee, 2001.4-2002.3.

[Academic]
- A member of:
    - American Association for the Advancement of Science (AAAS), 2007.9-
    - IPSJ (Information Processing Society of Japan), SIG-BIO. 2001.4-
    - JSBi (Japanese Society for Bioinformatics). 2001.4-

[Journal peer reviewing]
- Biosystems (Elsevier)
- Bioinformatics (Oxford University Press)
- BMC Bioinformatics (BioMed Central)
- Briefings in Bioinformatics (Oxford University Press)
- IEEE/ACM Transactions on Computational Biology and Bioinformatics (IEEE)
- Frontiers in Physiology (Frontiers Media, S.A.)

[Others]
- Publishing about slide rules, 2012.11 -
- Publising about nomograms, 2016.2 -
- Translation of the GNU Scientific Library reference manual, 2005.2.17-
- Translation of Graphviz/dot reference manual, 2004.4.28.
- Translation of PARI/GP tutorial, 2004.2.16.
- Translation of Statistical analysis software R FAQ, 2004.2.16.
- Performing Musical concerts on/for prep schools and hospitals as a member of Kamagaya Wind Orchestra. 2002.3 - current.
- A member of Technical committee of Kamagaya WInd Orchestra. 2003.4-2007.4, 2014.4 - current.