Asst. Prof. Dr. rer. nat. Apichat Suratanee

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78-1004, 10th floor, Faculty of Applied Science, King Mongkut's University of Technology North Bangkok (KMUTNB).

Research Interests:

Bioinformatics, Machine learning, Data Mining, Pattern recognition, Plant modeling.

Education:

2012: Dr. rer. nat. in Computer Science, Heidelberg University, Germany.
Dissertation Title: "Computational Analysis of RNAi Screening Data to Identify Host Factors Involved in Viral Infection and to Characterize Protein-Protein Interactions".

2004: M.Sc. in Computational Science, Chulalongkorn University, Thailand.
Thesis Title: "Simulation and Visualization of Soybean Growth Affected by Different Amount of Nitrogen, Phosphorus and Potassium".

2001: B.Sc. in Mathematics, Srinakharinwirot University, Thailand.

Professional experiences :

08/2006 - present: Lecturer, Department of Mathematics, Faculty of Applied Science, King Mongkut's University of Technology North Bangkok, Bangkok, Thailand.

10/2009 - 10/2012: Member of Heidelberg Graduate School of Mathematical and Computational Methods of the Sciences (HGS MathComp), Interdisciplinary Center for Scientific Computing (IWR) of Universität Heidelberg, Germany.

08/2008 – 10/2012: Performing Bioinformatics Research at
- Department of Bioinformatics and Functional Genomics, Institute of Pharmacy and Molecular Biotechnology (IPMB), University of Heidelberg, Germany, and
- Division of Theoretical Bioinformatics (B080), German Cancer Research Center (DKFZ), Germany.

08/2008 - 10/2012:	Doctoral student at Faculty of Mathematics and Computer Science, University of Heidelberg.
10/2006 - 08/2008:	Short term student at University of Heidelberg and performing research at Department of Bioinformatics and Functional Genomics, Institute of Pharmacy and Molecular Biotechnology (IPMB), University of Heidelberg, Germany.
04/2005 - 09/2006:	Programmer, The Black Tiger Shrimp Genome Project, Chulalongkorn University, Bangkok, Thailand.
05/2004 - 10/2004:	Lecturer at Department of Mathematics, Faculty of Applied Science, King Mongkut's University of Technology North Bangkok, Bangkok, Thailand.
05/2001 - 09/2006:	Research Assistant at Advanced Virtual and Intelligent Computing Research Center, Chulalongkorn University, Bangkok, Thailand.
11/2001 - 02/2002:	Teaching Assistant at Department of Mathematics, Faculty of Science, Chulalongkorn University, Bangkok, Thailand.

Fellowship and awards:

05/2018 – 05/2020	Research Grant MRG from the Thailand Research Fund (TRF), Thailand.
10/2007 – 06/2011	DAAD Long-term Research Fellowship, Germany.
04/2007 – 10/2007	DAAD German Language Study, Germany.
06/2002 – 03/2004	Scholarship for the Master of Science program from the Office of Commission on Higher Education, Ministry of Education, Thailand.
06/2009	Travel fellowship award, ISMB/ECCB 2009, Stockholm, Sweden.
11/2010	Travel fellowship award, ECCB2010, Ghent, Belgium.

Selected Publications :

A. Suratanee and K. Plaimas (2018). "Network-Based Association Analysis to Infer New Disease-Gene Relationships Using Large-Scale Protein Interactions", *PLoS ONE*, 13(6): e0199435, https://doi.org/10.1371/journal.pone.0199435.

Satanat Kitsiranuwat, Kitiporn Plaimas, **Apichat Suratanee** (2018), "Large-scale complex network analysis to investigate associations of disordered proteins and scale-free network", *The 2nd International Conference on Engineering Innovation 2018* (ICEI 2018), July 5-6, 2018, Bangkok, Thailand.

A. Suratanee and K. Plaimas (2017). "Reverse Nearest Neighbor Search on a Protein-Protein Interaction Network to Infer Protein-Disease Associations", *Bioinformatics and Biology Insights*, 11, doi: 10.1177/1177932217720405.

C. Chornkrathok, **A. Suratanee**, T. Buaboocha, S. Chadchawan, and K. Plaimas (2016). "Characterization of Clustering Coefficient for Signed Weighted Gene Co-Expression Network", *Proceedings of 7th International Conference in Mathematics and Applications (ICMA-MU 2016)*, the Centre of Excellence in Mathematics, December 17-19, pp. 21-30.

S. Kitsiranuwat, K. Plaimas, and **A. Suratanee** (2016). "Characterizing Network Topology of Disordered Proteins in Protein Interaction Networks", *Proceedings of 7th International Conference in Mathematics and Applications (ICMA-MU 2016)*, the Centre of Excellence in Mathematics, December 17-19, pp. 59-67.

Pajaree Sonsungsan, Kitiporn Plaimas, **Apichat Suratanee**, Chulee Yompakdee, and Sittiruk Roytrakul (2016). "Boolean Model For Analysing The Effect of A Coumarin Compound from *Clausena Harmandiana* in Jurkat T Cell Line", *Mae Fah Luang University International Conference 2016 on Advance in Medical and Health Sciences*, pp. 43-49.

A. Suratanee and K.Plaimas (2015). "DDA: A Novel Network-Based Scoring Method to Identify Disease-Disease Associations", *Bioinformatics and Biology Insights*, 9, pp. 175-186.

A. Suratanee, M. H. Schaefer, M. J. Betts, Z. Soons, H. Mannsperger, N. Harder, M. Oswald, M. Gipp, E. Ramminger, G. Marcus, R. Männer, K. Rohr, E. Wanker, R. B. Russell, M. A. Andrade-Navarro, R. Eils, and R. König (2014), "Characterizing Protein Interactions Employing a Genome-Wide siRNA Cellular Phenotyping Screen", *PLOS Computational Biology*, 10(9): e1003814. doi:10.1371/journal.pcbi.1003814.

A. Suratanee and K. Plaimas (2014). "Identification of inflammatory bowel disease-related proteins using a reverse k-nearest neighbor search". *Journal of Bioinformatics and Computational Biology*, Vol. 12, No. 4. DOI: 10.1142/S0219720014500176.

M. Gipp, G. Marcus, N. Harder, **A. Suratanee**, K. Rohr, R. König, R. Männer (2012). “Haralicks Texture Features Computation Accelerated by GPUs for Biological Applications”. In H.G. Bock, X.P. Hoang, R.Rannacher, J.P. Schlöder (Eds.), *Modeling, Simulation and Optimization of Complex Processes* (pp. 127-138). March 2-6, 2009, Hanoi, Vietnam: Springer.

A. Suratanee, I. Rebhan, P. Matula, A. Kumar, L. Kaderali, K. Rohr, R. Bartenschlager, R. Eils, R. König. (2010). “Detecting host factors involved in virus infection by observing the clustering of infected cells in siRNA screening images”. *Bioinformatics* (*Oxford Journal*), 2010 Sep 15, Vol. 26(18), pp. i653-8.

M. Gipp, G. Marcus, N. Harder, **A. Suratanee**, K. Rohr, R. König, R. Männer (2009). “Haralick's Texture Features Computed by GPUs for Biological Applications”. *IAENG International Journal of Computer Science*, 2009, Vol. 36(1), 2009.

M. Gipp, G. Marcus, N. Harder, **A. Suratanee**, K. Rohr, R. König, and R. Männer (2008). “Accelerating the computation of Haralick's Texture Features using Graphics Processing Units (GPUs)”, *Proc. World Congress on Engineering 2008* (WCE'08) (pp. 587-593), The 2008 *Internat. Conf. of Parallel and Distributed Computing* (ICPDC'08), London, UK, July 2-4, 2008, Newswood Limited, International Association of Engineers 2008.

A. Suratanee, K. Na Nakornphanom, K.Plaimas, C.Lursinsap (2008). “Partitioning for High Performance of Predicting Dynamical Behavior of Color Diffusion in Water using 2-D tightly Coupled Neural Cellular Network”. In H.G. Bock, E. Kostina, H.X. Phu, R. Rannacher (Eds.), *Modeling, Simulation and Optimization of Complex Processes* (pp. 565-574). March 6-10, 2006, Hanoi, Vietnam: Springer.

K. Plaimas, C. Lursinsap, **A. Suratanee** (2005). “High Performance of Artificial Neural Network of Resolving Ambiguous Nucleotide Problem”, *19th IEEE International Parallel and Distributed Processsing Symposium* (IPDPS-2005), April 2005, Denver, Colorado, USA.

A.Suratanee, S.Siripant, C.Lursinsap, and K.Plaimas. (2005). “Simulation and Visualization Of Soybean Growth Affected By Different Amount of Primary Nutrient*”, The Northeastern Computer Science and Engineering Conference* (NECSEC2005), 31 March-1 April, 2005, Khon Kaen, Thailand.

A. Suratanee, S. Siripant, and C. Lursinsap (2004). “Modeling the Soybean Growth in Different Amount of Nitrogen, Phosphorus, and Potassium Using Neural Network”, *Proceedings of the 4th International Workshop on Functional-Structural Plant Models*, pp. 130-133, 2004, France.

Book Chapter and Academic Writing (In Thai):

อภิชาต ศุรธณี. (2559). เอกสารประกอบการสอนวิชา คณิตศาสตร์สำหรับปัญญาประดิษฐ์ รหัสวิชา 423356 Mathematics for Artificial Intelligence. กรุงเทพฯ: มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าพระนครเหนือ.

อภิชาต ศุรธณี. (2558). "การระบุความสัมพันธ์ของโรคโดยใช้ดัชนีความสัมพันธ์". วารสารวิทยาศาสตร์ประยุกต์. ปีที่ 14 ฉบับที่ 1 หน้า 68-77.

อภิชาต ศุรธณี. (2556). "โครงสร้างแบบแฮช (Hashing in Data Structure)". เอกสารการสอนชุดวิชาโครงสร้างข้อมูลและขั้นตอนวิธี (Data Structures and Algorithms) สาขาวิชาวิทยาศาสตร์และเทคโนโลยี มหาวิทยาลัยสุโขทัยธรรมาธิราช. นนทบุรี: โรงพิมพ์สุโขทัยธรรมาธิราช.

อภิชาต ศุรธณี. (2556) "ขั้นตอนวิธีเวียนเกิดและย้อนรอย (Recursive and Backtracking Algorithm)". เอกสารการสอนชุดวิชา โครงสร้างข้อมูลและขั้นตอนวิธี (Data Structures and Algorithms) สาขาวิชาวิทยาศาสตร์และเทคโนโลยี มหาวิทยาลัยสุโขทัยธรรมาธิราช. นนทบุรี: โรงพิมพ์สุโขทัยธรรมาธิราช.

Teaching Experience:

Course		Semester/Academic Year
423356	Mathematics for Artificial Intelligence	1/2556, 1/2557, 1/2558, 1/2559, 1/2560, 3/2560
423355	Data Mining	1/2558, 1/2559, 3/2560
040245234	Data Mining (Graduate Course)	1/2559
423455	Mathematics in Machine Learning	1/2556, 2/2558, 2/2559, 2/2560
040213243	Data Structures and Algorithms in Mathematics	2/2556
040213141	Computer Programming for Mathematics I	2/2555,2/2556, 2/2557, 2/2558
422141	Computer Programming for Mathematics	2/2555
422207	Discrete Mathematics and Applications	2/2557
040223351	Mathematical Software	2/2559
040245104	Mathematical Algorithm Design and Analysis (Graduate Course)	2/2559
040203100	General Mathematics	1/2556, 1/2559
040283111	Engineering Mathematics I	1/2559
040203112	Engineering Mathematics II	2/2556
040283112	Engineering Mathematics II	2/2559
040203211	Engineering Mathematics III	1/2557, 1/2558, 1/2560
421211	Engineering Mathematics III	1/2557
040283211	Engineering Mathematics III	1/2560
040203202	Matrices and Vector Analysis	2/2560