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Associate Professor  
Department of Computer Science  
The University of Hong Kong

### **Areas of expertise**

Computer Security, Cryptography, Bioinformatics

### **Summary of achievements**

- Published 100+ papers in referred journals and conferences (Google Scholar statistics: Citations (8627), h-index (41), i10-index (98)).
- Conference/programme chairs in prestigious conferences in both areas of cryptography and bioinformatics (e.g. Asiacrypt 2017, RECOMB 2017).
- Journal editor: Information Processing
- Research grants (past 5 years): HK\$2M
- International collaboration:
  - US, UK, Japan, Taiwan, China etc.
- Experience in industrial projects:
  - [Completed in 2014] Huawei (Singapore) – Android apps (attack detection)
  - [Completed in 2015] Hong Kong Sanatorium & Hospital – A genomic and pharmaceutical knowledge-based system for clinical diagnosis and case repository (ITF funding, HKSAR)
  - [Current] Astri (Hong Kong) – Cyber range (attack packet flow simulation)
  - [Current] Vicktor Capital (Asia) Limited – Data mining on financial data (both encrypted or in plaintext)
  - [Current] Bank of China (Hong Kong) – Blockchain applications

### **Education**

PhD in Computer Science, The University of Hong Kong, December 1997

MS in Computer and Information Science, Temple University, Philadelphia, USA, May 1992

B.Sc. in Computer Science, The Chinese University of Hong Kong, May 1988

Major: Computer Science

Minor: Mathematics

### **Working Experience**

**08/12 – Now**

Associate Professor

Department of Computer Science, The University of Hong Kong

**09/08 – 07/12**

Assistant Professor

Department of Computer Science, The University of Hong Kong

**01/06 – 08/08**

Research Assistant Professor (Bioinformatics)

Department of Computer Science, The University of Hong Kong

**02/01 – 12/05**

Teaching Consultant, Department of Computer Science, The University of Hong Kong

**07/00 – 01/01**

Senior Research Assistant, Department of Computer Science, The University of Hong Kong

**09/96 – 06/00**

Assistant Professor (09/98 – 06/00); Assistant Lecturer (09/96 - 08/98)  
Department of Computer Science, The University of Hong Kong

**07/88 - 07/90**

Analyst Programmer II, Royal Hong Kong Police Force, The Hong Kong Government

**Awards**

**Research Output Prize (Department of Computer Science) 2013**

The University of Hong Kong

Yu Peng, Henry C.M. Leung, S.M. Yiu, Francis Chin, “IDBA-UD: A de novo assembler for single-cell and metagenomic sequencing data with highly uneven depth”, *Bioinformatics* 28(11), 2012, p.1420-1428.

**Research Output Prize (Faculty of Engineering) 2006**

The University of Hong Kong

SM Yiu, TW Lam, YC Mui, HF Kung, Marie Lin, YT Cheung, Prudence WH Wong, “Filtering of Ineffective siRNAs and Improved siRNA Design Tool”, *Bioinformatics* 21(2), 2005, p.144-151.

**Engineering Overseas Visitor Programme Fellowship, HKU (2012–2013)**

Joint Genome Institute, Department of Energy, US

Genome Analysis program, Group Leader (Dr Zhong Wang)

08 Aug 2013 – 21 Aug 2013

**Engineering Overseas Visitor Programme Fellowship, HKU (2010–2011)**

Department of Computer Science, University of Toronto (Prof. Michael Brudno)

21 Mar 2011 – 25 Mar 2011

**William Mong Visiting Research Fellowship (Engineering), HKU (2009 –2010)**

Department of Computer Science, Stanford University (Prof. Serafim Batzoglou)

14 Jan 2010 – 27 Jan 2010

**Engineering Overseas Visitor Programme Fellowship, HKU (2008 – 2009)**

Gerstein’s Laboratory, Yale University

06 Apr 2009 – 30 Apr 2009

**Engineering Overseas Visitor Programme Fellowship, HKU (2009–2010)**

Computational Biology Research Center (CBRC), AIST, Japan

23 Feb 2010 – 06 Mar 2010

**Visitorships for Academic Exchange Programme with the Mainland and Taiwan, HKU (2010)**

National Tsinghua University, Taiwan (NTHU)

19 – 22 April 2010

**Outstanding Teaching Award 2009**

The University of Hong Kong

**Best Teacher Award, 2004-2005; 2008-2009**

Faculty of Engineering, The University of Hong Kong

**Teaching Excellence Award, 2000-2001; 2002-2003; 2003-2004; 2004-2005, 2006-2007; 2008-2009, 2009-2010**

Department of Computer Science, The University of Hong Kong

**Outstanding Tutor Award, 1994-1995 and 1995-1996**

Department of Computer Science, The University of Hong Kong

## SELECTED RECENT PUBLICATIONS (past 5 years)

### Bioinformatics

#### *Journal publications*

Xiao Zhu, Henry C.M. Leung, Rongjie Wang, Francis Y.L. Chin, Siu-Ming Yiu, Guangri Quan, Yajie Li, Rui Zhang, Qinghua Jiang, Bo Liu, Yucui Dong, Guohui Zhou, Yadong Wang, misFinder: identify mis-assemblies in an unbiased manner using reference and paired-end reads. **BMC Bioinformatics** 16: 386, 2015.

Qing Zhan, Yongtao Ye, Tak Wah Lam, Siu-Ming Yiu, Yadong Wang, Hing-Fung Ting, Improving multiple sequence alignment by using better guide trees, **BMC Bioinformatics** 16(S-5): S4, 2015.

Yongtao Ye, David W. Cheung, Yadong Wang, Siu-Ming Yiu, Qing Zhan, Tak Wah Lam, Hing-Fung Ting, *GLProbs: Aligning multiple sequences adaptively*, IEEE/ACM Transactions on Computational Biology and Bioinformatics (**IEEE/ACM TCBB**), 12(1), p.67-78, 2015.

Henry C.M. Leung, Siu-Ming Yiu, Francis Y.L. Chin, IDBA-MTP: A hybrid metatranscriptomic assembler based on protein information, **Journal of Computational Biology (JCB)**, 22(5), p.367-376, 2015.

Xihao Hu, Thomas K.F. Wong, Zhi John Lu, Ting-Fung Chan, Terrence Chi Kong Lau, Siu-Ming Yiu, Kevin Y. Yip, Computational identification of protein binding sites on RNAs using high-throughput RNA structure-probing data, **Bioinformatics**, 30(8), 1049-1055, 2014.

Yi Wang, Henry C.M. Leung, Siu-Ming Yiu, Francis Y.L. Chin, MetaCluster-TA: taxonomic annotation for metagenomic data based on assembly-assisted binning, **BMC Genomics**, 15, S1-S12, 2014.

Jikun Wu, Wenqian Zhang, Songbo Huang, Zengquan He, Yanbing Cheng, Jun Wang, Tak Wah Lam, Zhiyu Peng, Siu-Ming Yiu, *SOAPfusion: a robust and effective computational fusion discovery tool for RNA-seq reads*, **Bioinformatics**, 29(23), p.2971-2978, 2013.

Henry C.M. Leung, Siu-Ming Yiu, John Parkinson, Francis Y.L. Chin, IDBA-MT: De novo assembler for metatranscriptomic data generated from next-generation sequencing technology, **Journal of Computational Biology**, 20(7), p.540-550, 2013.

Keith R Bradnam, ..., Siu-Ming Yiu, ..., *Assemblathon 2: evaluating de novo methods of genome assembly in three vertebrate species*, **GigaScience**, 2(1):10. DOI:10.1186/2047-217X-2-10 Source: arXiv, 07/2013.

Yu Peng, Henry C.M. Leung, Siu-Ming Yiu, Ming-Ju Lv, Xin-Guang Zhu, Francis Y.L. Chin, IDBA-tran: a more robust de novo de Bruijn graph assembler for transcriptomes with uneven expression levels, **Bioinformatics**, 29(13), p.326 – 334, 2013.

Francis Y.L. Chin, Henry C.M. Leung, S.M. Yiu, *Non-Adaptive Complex Group Testing with Multiple Positive Sets*, *invited to* Theoretical Computer Science (**TCS**), 505, p.11-18, 2013. Also to appear in Proceedings of 8<sup>th</sup> Annual Conference on Theory and Applications of Models of Computation (**TAMC 2011**), 2011.

Binghang Liu, Jianying Yuan, Siu-Ming Yiu, Zhenyu Li, Yinlong Xie, Yanxiang Chen, Yujian Shi, Hao Zhang, Yingrui Li, Tak-Wah Lam, Ruibang Luo, *COPE: An accurate k-mer based Pair-end Reads Connection Tool to Facilitate Genome Assembly*, **Bioinformatics**, 28(22), p.2870 – 2874, 2012.

Jianqian Zhu, Thomas Wong, Chi-Man Liu, Edward Wu, Ruibang Luo, Hing-Fung Ting, Siu-Ming Yiu, Yingrui Li, B. Wang, C. Yu, Ruiqiang Li, Tak-Wah Lam, *SOAP3-dp: Ultra-fast GPU-based Tool for Short Read Alignment via Index-Assisted Dynamic Programming*, **PLoS ONE**, 8(5):e65632. DOI:10.1371/journal.pone.0065632, 01/2013.

Ruibang Luo, ... Siu-Ming Yiu, ..., *SOAPdenovo2: an Empirically Improved Memory-Efficient Short-Read de Novo Assembler*, **GigaScience**, 1(1): 18. DOI: 10.1186/2047-217X-1-18, 01/2012/

Yi Wang, Henry C.M. Leung, S.M. Yiu, Francis Y.L. Chin, *MetaCluster 5.0: A Two-Round Binning Approach for Metagenomic Data for Low-Abundance Species in a Noisy Sample*, **Bioinformatics**, 28(18), p.356 – 362, 2012. Also, to be presented in **ECCB 2012**: The 11<sup>th</sup> European Conference on Computational Biology.

Thomas K.F. Wong, Bay-Yuan Hsu, Wing-Kai Hon, Tak-Wah Lam, Siu-Ming Yiu, *A Novel Structural Prediction Algorithm for RNA Triple Helix Structure*, submitted to *IEEE/ACM Transactions on Computational Biology and Bioinformatics (IEEE/ACM TCBB)*, 2012.

Yu Peng, Henry C.M. Leung, S.M. Yiu, Francis Y.L. Chin, *IDBA-UD: A De Novo Assembler for Single-Cell and Metagenomic Sequencing Data with Highly Uneven Depth*, **Bioinformatics**, 28(11), p.1420-1428, 2012. Also, to be presented in **HiTSeq 2012**: Conference on High Throughput Sequencing Analysis and Algorithms.

Christopher Ma, Thomas K.F. Wong, T.W. Lam, W.K. Hon, K. Sadakane, S.M. Yiu, *An Efficient Alignment Algorithm for Searching Simple Pseudoknots over Long Genomic Sequence*, *IEEE/ACM Transactions on Computational Biology and Bioinformatics (IEEE/ACM TCBB)*, 9(6), p.1629 – 1638, 2012.

C.M. Liu, Thomas Wong, Edward Wu, Ruibang Luo, S.M. Yiu, Yingrui Li, B. Wang, C. Yu, X. Chu, K. Zhao, Ruiqiang Li, T.W. Lam, *SOAP3: Ultra-fast GPU-based Parallel Alignment Tool for Short Reads*, **Bioinformatics**, 28(6), p.878 – 879, 2012.

Thomas K.F. Wong, S.M. Yiu, *Structural Alignment of RNA with Triple Helix Structure*, **Journal of Computational Biology (JCB)**, 19(4), p.365 – 378, 2012.

Yi Wang, Henry C.M. Leung, S.M. Yiu, Francis Y.L. Chin, *MetaCluster 4.0: A Novel Binning Algorithm for NGS Reads and Huge Number of Species*, *Journal of Computational Biology (JCB)*, 19(2), p.241 – 249, 2012.

Songbo Huang, Jinbo Zhang, Ruiqiang Li, Wenqian Zhang, Zengquan He, Tak-Wah Lam, Zhiyu Peng, Siu-Ming Yiu, *SOAPSplICE: genome-wide ab initio detection of splice junctions from RNA-seq data*, **Frontiers in Genomic Assay Technology**, 2:46. doi: 10.3389/fgene.2011.00046, 2011.

Thomas K.F. Wong, Kwok-Lung Wan, Bay-Young Hsu, Hui-Ting Yu, Brenda W.Y. Cheung, Tak-Wah Lam, Wing-Kai Hon, Siu-Ming Yiu, *RNASAlign (RNA Structural Alignment System)*, **Bioinformatics**, 27(15), p.2151-2152, 2011.

Henry C.M. Leung, S.M. Yiu, Bin Yang, Yu Peng, Yi Wang, Zhihua Liu, Jingchi Chen, Junjie Qin, Ruiqiang Li, Francis Y.L. Chin, *A Robust and Accurate Binning Algorithm for Metagenomic Sequences with Arbitrary Species Abundance Ratio*, **Bioinformatics**, 27(11), p.1489-1495, 2011. Also, to be presented in **HiTSeq 2011**: Conference on High Throughput Sequencing Analysis and Algorithms.

Yu Peng, Henry C.M. Leung, S.M. Yiu, Francis Y.L. Chin, *Meta-IDBA: De Novo Assembler for Mixed Species in Metagenomics Data*, **Bioinformatics**, 27(13), p.94-101, 2011. Also, to be presented in 19<sup>th</sup> Annual International Conference on Intelligent Systems for Molecular Biology and 10<sup>th</sup> European Conference on Computational Biology (**ISMB/ECCB 2011**), 2011.

Yizhen Jia, Thomas KF Wong, You-Qiang Song, Siu-Ming Yiu, David Smith, *Refining Ortholog Groups at the Transcript Level*, **BMC Genomics**, 11(Suppl 4):S11, doi:10.1186/1471-2164-11-S4-S11, 2011.

Thomas K.F. Wong, Y.S. Chiu, T.W. Lam, S.M. Yiu, *A Memory Efficient Algorithm for Structural Alignment of RNAs with Pseudoknots*, *IEEE/ACM Transactions on Computational Biology and Bioinformatics (IEEE/ACM TCBB)*, 9(1), p.161 – 168, 2012.

Thomas K.F. Wong, Brenda W.Y. Cheung, T.W. Lam, S.M. Yiu, *Local Structural Alignment of RNA with Affine Gap Model*, **BMC Proceedings**, 5(Suppl 2):S2, 2011.

Thomas K.F. Wong, T.W. Lam, Wing-Kin Sung, Brenda W.Y. Cheung, S.M. Yiu, *Structural Alignment of RNA with Complex Pseudoknot Structure*, **Journal of Computational Biology (JCB)**, 18(1), p.97-108, 2011. doi:10.1089/cmb.2009.0275.

### Conference publications

Jia-Xin Li, Jian-Yu Shi, Ke Gao, Siu Ming Yiu, Predicting drug-target interaction for new drugs using enhanced similarity measures and super-target clustering, *to appear* in Proceedings of **ISBRA 2016**, 2016.

Vinaya Vijayan, Siu Ming Yiu, Liqing Zhang, Framework for integration of genome and exome data to improve the identification of somatic variants, *to appear* in Proceedings of **ISBRA 2016**, 2016.

Menglu Li, Angel C.Y. Mak, Ernest T. Lam, Pui-Yan Kwok, Ming Xiao, Kevin Y. Yip, Ting Fung Chan, Siu Ming Yiu, Towards a more accurate error model for BioNano optical maps, *to appear* in Proceedings of **ISBRA 2016**, 2016.

Jianyu Shi, Siu-Ming Yiu, SRP: A concise non-parametric similarity-rank-based model for predicting drug-target interactions, *Proceedings of IEEE International Conference on Bioinformatics and Biomedicine (BIBM 2015)*, 1636-1641, 2015.

Jian-Yu Shi, Siu-Ming Yiu, Yiming Li, Henry C.M. Leung, Francis Y.L. Chin, Predicting drug-target interaction for new drugs using enhanced similarity measures and super-target clustering, *Proceedings of IEEE International Conference on Bioinformatics and Biomedicine (BIBM 2014)*, 45-50, 2014.

Yongtao Ye, David W. Cheung, Yadong Wang, Siu-Ming Yiu, Qing Zhan, Tak Wah Lam, Hing-Fung Ting, *GLProbs: Aligning multiple sequences adaptively*, *Proceedings of the ACM Conference on Bioinformatics, Computational Biology and Biomedicine 2013 (ACM BCB 2013)*, p.152, 2013.

Hao Vu, Francis YL Chin, Wing-Kai Hon, Henry CM Leung, Kuniyiko Sadakane, Ken Wing-Kin Sung, Siu-Ming Yiu, *Reconstructing k-Reticulated Phylogenetic Network from a Set of Gene Trees*, **ISBRA 2013**, p.112 – 124, 2013.

Xuan Liu, David Wai-Lok Cheung, Hing-Fung Ting, Tak-Wah Lam, Siu-Ming Yiu, *LCR\_Finder: A de novo Low Copy Repeat Finder for Human Genome*, **ISBRA 2013**, p.125-136, 2013.

Bay-Yuan Hsu, Thomas KF Wong, Wing-Kai Hon, Xinyi Liu, Tak-Wah Lam, Siu-Ming Yiu, *A Local Structural Prediction Algorithm for RNA Triple Helix Structure*, **PRIB 2013**, p.102-113, 2013.

Ruibang Luo, C.M. Liu, T. Wong, C. Yu, T.W. Lam, S.M. Yiu, Ruiqiang Li, H.F. Ting, *Efficient SNP-Sensitive Alignment and Database-Assisted SNP Calling for Low Coverage Samples*,

Junjie Yu, Chi Ming Leung, Siu Ming Yiu, Yong Zhang, Francis Y.L. Chin, Nathan Hobbs and Amy Y.X. Wang, *Phylogenetic tree reconstruction with protein linkage*, Proceedings of the International Symposium on Bioinformatics Research and Applications (**ISBRA 2012**), p. 315 – 327, 2012.

C.M. Liu, T.W. Lam, Thomas Wong, Edward Wu, S.M. Yiu, Z.Li, R.Luo, B. Wang, C. Yu, X. Chu, K. Zhao, Ruiqiang Li, *SOAP3: GPU-based Compressed Indexing and Ultra-fast Parallel Alignment of Short Reads*, to be presented in the Third Workshop on Massive Data Algorithmics (**MASSIVE 2011**), also accepted by GPU Technology Conference (**GTC 2012**), 2011.

Xuan Liu, Shing-Wan Choi, Thomas K. F. Wong, Tak-Wah Lam, Siu-Ming Yiu, *Detection of Tandem Duplication with Next-Generation Sequencing*, Proceedings of the ACM Conference on Bioinformatics, Computational Biology and Biomedicine 2011 (**ACM BCB 2011**), p.415 – 419, 2011.

Thomas K.F. Wong, Bay-Yuan Hsu, Wing-Kai Hon, Hui-Ting Yu, Tak-Wah Lam, Siu-Ming Yiu, *Algorithms for Pseudoknot Classification*, Proceedings of the ACM Conference on Bioinformatics, Computational Biology and Biomedicine 2011 (**ACM BCB 2011**), p.484 – 486, 2011.

Yu Peng, Henry C.M. Leung, S.M. Yiu, Francis Y.L. Chin, *T-IDBA: A de novo Iterative de Bruijn Graph Assembler for Transcriptome*, extended abstract, Proceedings of the 15<sup>th</sup> Annual International Conference on Research in Computational Molecular Biology (**RECOMB 2011**), p.337 – 338, 2011.

Yu Peng, Henry C.M. Leung, S.M. Yiu, Francis Y.L. Chin, *Meta-IDBA: De Novo Assembler for Mixed Species in Metagenomics Data*, to appear in Proceedings of 19<sup>th</sup> Annual International Conference on Intelligent Systems for Molecular Biology and 10<sup>th</sup> European Conference on Computational Biology (**ISMB/ECCB 2011**), 2011.

Francis Y.L. Chin, Henry C.M. Leung, S.M. Yiu, *Non-Adaptive Complex Group Testing with Multiple Positive Sets*, Proceedings of 8<sup>th</sup> Annual Conference on Theory and Applications of Models of Computation (**TAMC 2011**), p.172-183, 2011.

#### Software developed

|            |   |
|------------|---|
| IDBA-UD:   | An iterative De Bruijn Graph de novo assembler for short reads sequencing data with highly uneven sequencing depth which can be applied to assembling single-cell and metagenomic sequencing data |
| Meta-IDBA: | An iterative De Bruijn Graph de novo short read assembler for metagenomic data based on graph partition   |
| T-IDBA:    | An iterative De Bruijn Graph de novo short read assembler for transcriptomes  |
| IDBA-MT:   | De novo assembling for metatranscriptome data   |
| IDBA-tran: | De novo assembling for transcriptome data   |
| IDBA:      | A practical iterative De Bruijn Graph de novo short read assembler for DNA genomes  |
| MSS:       | A tool for whole genome alignment   |

|                               |   |
|-------------------------------|---|
| siRNA:                        | A tool for predicting siRNA candidates  |
| SOAPaligner/SOAP2:            | A program for high-throughput alignment of short oligonucleotide onto a reference genome  |
| SOAP3:                        | A GPU-based tool for aligning short reads onto a reference sequence.  |
| SOAP3-dp:                     | An ultra-fast GPU-based tool for short read alignment via index-assisted dynamic programming  |
| 2BWT-Fast Short Read Aligner: | A tool to search for large number of patterns in human genomic sequences,<br>the core for SOAP2.  |
| DNA wildcard matching tool:   | A tool, based on 2bwt, that performs exact pattern matching allowing wildcards to appear in the text being searched.                            |
| BWT-SW:                       | A local alignment tool for searching nucleotide sequences, similar to BLAST, but find all local alignments.                                     |
| SOAPsplice:                   | A tool to use RNA-seq reads for genome-wide ab initio detection of splice junction sites and identification of alternative splicing (AS) events |
| SOAPfusion:                   | A tool that use RNA-seq reads and gene annotation to detect fusion genes  |
| MetaCluster:                  | A tool for binning of genomic fragments for metagenomics analysis (v0.1, v2, v3, v4, v5)  |
| MetaCluster-TA:               | A tool for taxonomic assignment for metagenomic data  |
| Core:                         | An open source program for predicting protein complex from PPI network  |
| DMPFinder:                    | A tool for finding differentiating pathways with gaps from two groups of metabolic networks,  |
| SimDNA:                       | An indexing tool for indexing similar DNA sequences. It supports exact pattern searching.   |
| RRS3D:                        | An efficient RNA retrieval system with similar 3D structures  |
| RNASAlign                     | A tool for RNA structural alignment that find regions with similar sequence and secondary structure along DNA/RNA sequences.                    |

## **Computer Security**

### Journal publications

Changhui Hu, Lidong Han, Siu-Ming Yiu, Efficient and secure multi-functional searchable symmetric encryption schemes, **Security and Communication Networks**, 9(1), 34-42, 2016.

Zhian He, Wai Kit Wong, Ben Kao, David Wai-Lok Cheung, Rongbin Li, Siu-Ming Yiu, Eric Lo, SDB: A secure query processing system with data interoperability, **PVLDB**, 8(12), 1876-1887, 2015.

Tat Wing Chim, Siu-Ming Yiu, Victor O.K. Li, Lucas Chi Kwong Hui, Jin Zhong, PRGA: Privacy-preserving recording & gateway-assisted authentication of power usage information for smart grid, **IEEE Trans. Dependable Sec. Comput. (IEEE TDSC)**, 12(1), p.85-97, 2015.

Zhian He, Wai Kit Wong, Ben Kao, David Wai-Lok Cheung, Rongbin Li, Siu-Ming Yiu, Eric Lo, SDB: A secure query processing system with data interoperability, **PVLDB** 8(12), p.1876-1887, 2015.

Pierre K.Y. Lai, K.P. Chow, Lucas Chi Kwong Hui, Siu-Ming Yiu, Modeling the initial stage of a file sharing process on a BitTorrent network, **Peer-to-Peer Networking and Applications**, 7(4), p.311-319, 2014.

Tat Wing Chim, Siu-Ming Yiu, Lucas Chi Kwong Hui, Victor O.K. Li, VSPN: VANET-based secure and privacy-preserving navigation, **IEEE Transactions on Computers**, 63(2), p.510-524, 2014.

Tat Wing Chim, Siu-Ming Yiu, Lucas Chi Kwong Hui, Victor O.K. Li, *VANET-based secure taxi service*, **Ad Hoc Networks**, 11(8), p.2381-2390. 2013.

Patrick Chi Kwong Chan, Lucas Chi Kwong Hui, Siu-Ming Yiu, *Heap Graph Based Software Theft Detection*, **IEEE Transactions on Information Forensics and Security (IEEE IFS)**, 8(1), p.101-110, 2013.

Tat Wing Chim, Siu-Ming Yiu, Lucas Chi Kwong Hui, Victor O.K. Li, VANET-based secure taxi service, **Ad Hoc Networks**, 11(8), p.2381-2390, 2013.

Zoe L. Jiang, Junbin Fang, Frank Y.W. Law, Pierre K.Y. Lai, Ricci S.C. Jeong, Michael Y.K. Kwan, K.P. Chow, Lucas Chi Kwong Hui, Siu-Ming Yiu, Kevin K.H. Pun, *Maintaining hard disk integrity with digital legal professional privilege (LPP) data*, **IEEE Transactions on Information Forensics and Security (IEEE IFS)**, 8(5), p.821-828, 2013.

Xianhua Song, Shen Wang, Siu-Ming Yiu, Lin Jiang, Xiamu Niu, *Detection of Image Region Duplication Using Spin Image*, **IEICE Transactions** 96-D(7), p.1565-1568, 2013.

Yunming Ye, Qingyao Wu, Yan Li, KP Chow, Lucas Chi Kwong Hui, Siu-Ming Yiu, *Unknown Chinese word extraction based on variety of overlapping strings*, **Information Processing Management**, 49(2), p.497-512, 2013.

Ye Zhang, Wai-Kit Wong, S.M. Yiu, Nikos Mamoulis, David W. Cheung, *Lightweight Privacy-Preserving Peer-to-Peer Data Integration*, **Proceedings of the VLDB Endowment (PVLDB)**, 6(3), p.157-168, 2013.

Zoe L. Jiang, Junbin Fang, Lucas C.K. Hui, S.M. Yiu, K.P. Chow, M.M. Sheng, *k-Dimension Hashing Scheme for Hard Disk Integrity Verification in Computer Forensics*, **Journal of Zhejiang University – SCIENCE C (JZUSC)**, 12(10), p.809-818, 2011.

Patrick P.F. Chan, Lucas C.K. Hui, S.M. Yiu, *Heap Graph based Software Theft Detection*, to appear in **IEEE Transactions on Information Forensics and Security (IEEE TIFS)**, 2012.

Tat Wing Chim, S.M. Yiu, Lucas C.K. Hui, Victor O.K. Li, *PAPB: Privacy-preserving Advance Power Reservation*, **IEEE Communications Magazine (CM)**, Feature Topic on Cyber Security for Smart Grid Communications, 50(8), p.18-23, 2012.

Sherman S.M. Chow, S.M. Yiu, *Exclusion-Intersection Encryption*, to appear in **International Journal of Security and Networks (IJSN)**, 2011.



T.W. Chim, S.M. Yiu, C.K. Hui, Victor O.K. Li, K.H. Yuen, H.M. Tse, K.Y. Lam, Y.L. Lai, *STS: Secure Taxi Service using 3G Networks*, submitted to IEEE Transactions on Systems, Man and Cybernetics (**IEEE SMC-PART C**)– Part C: Applications and Reviews, 2012.

T.W. Chim, S.M. Yiu, C.K. Hui, Victor O.K. Li, *VSPN: VANET-based Secure and Privacy-Preserving Navigation*, to appear in IEEE Transactions on Computers (**IEEE TC**), 2012.

T.W. Chim, S.M. Yiu, C.K. Hui, Victor O.K. Li, *VANET-based Secure Taxi Service*, submitted to **Ad Hoc Networks**, 2012.

T.W. Chim, S.M. Yiu, Lucas C.K. Hui, Victor O.K. Li, Jeanno C.L. Cheung, C.K. Kwok, T.W. Mui, Y.H. Tsang, K.Y. Yu, *PPRC: Privacy-Preserving Power Request using Credentials*, submitted to **IEEE Transactions on Smart Grid** (Special Issue on Smart Grid Communication Systems: Reliability, Dependability & Performance), 2012.

T.W. Chim, L.J. Cheung, S.M. Yiu, C.K. Hui, Victor O.K. Li, *SPCS: Secure and Privacy-Preserving Charging Station Searching using VANET*, Journal of Information Security (**JISEC**), 3(1), p.59-67, 2012.

T.W. Chim, S.M. Yiu, C.K. Hui, V.O.K. Li, *MLAS: Multiple Level Authentication Scheme for VANETs*, **Ad Hoc Networks**, 10(7), p.1445-1456, 2012.

Changhui Hu, Tat Wing Chim, S.M. Yiu, Lucas C.K. Hui, Victor O.K. Li, *Efficient HMAC-based Secure Communication for VANETs*, **Computer Networks Journal**, 56(9), p.2292-2303, 2012.

T.W. Chim, S.M. Yiu, Lucas C.K. Hui, Victor O.K. Li, *OPQ: OT-based Private Querying in VANETs*, IEEE Transactions on Intelligent Transportation Systems (**IEEE TITS**), 12(4), p. 1413-1422, 2011.

Junbin Fang, Zoe L. Jiang, S.M. Yiu, Lucas C.K. Hui, *An Efficient Scheme for Hard Disk Integrity Check in Digital Forensics by Hashing with Combinatorial Group Testing*, International Journal of Digital Content Technology and Its Applications (**JDCTA**), 5(2), p.300-308, 2011.

T.W. Chim, S.M. Yiu, Lucas C.K. Hui, Zoe L. Jiang, Victor O.K. Li, *SPECS: Secure and Privacy Enhancing Communications Schemes for VANETs*, **Ad Hoc Networks**, 9(2), p.189-203, 2011.

#### Conference publications

Jingxuan Wang, Lucas Chi Kwong Hui, Siu-Ming Yiu, Data framing attacks against nonlinear state estimation in smart grid, Proceedings of **GLOBECOM** workshops, 1-6, 2015.

Nairen Cao, Xiaoqi Yu, Yufang Yang, Linru Zhang, Siu-Ming Yiu, An ORAM scheme with improved worst-case computational overhead, Proceedings of **ICICS**, 393-405, 2015.

Yanbin Tang, Zheng Tan, Kam-Pui Chow, Siu-Ming Yiu, Junbin Fang, Xiamu Niu, Qi Han, Xianyan Wu, Fragmented JPEG File Recovery Using Pseudo Headers, Proceedings of **IFIP Int. Conf. Digital Forensics 2015**, 215-231, 2015.

Tsz Hon Yuen, Cong Zhang, Sherman S.M. Chow, Siu-Ming Yiu, Related randomness attacks for public key cryptosystems, Proceedings of 10<sup>th</sup> ACM Symposium on Information, Computer and Communications Security (**ASIACCS 2015**), p.215-223, 2015.

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T.W. Chim, S.M. Yiu, Lucas C.K. Hui, Victor O.K. Li, *PASS: Privacy-Preserving Authentication Scheme for Smart Grid Network*, Proceedings of the Second IEEE International Conference on Smart Grid Communications (**IEEE SmartGridComm**), p.196-201, 2011.

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Sixth International Workshop on Systematic Approaches to Digital Forensic Engineering (**SADFE 2011**), 2011.

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## **OTHER EXPERIENCE**

### **(VISIT, MANAGEMENT, PROGRAMME DEVELOPMENT, CONSULTANCY)**

#### **Genome Institute of Singapore, Singapore**

*Visiting Scholar* (Jul 10 – Aug 04, 2006)

#### **The Fifth Asia Pacific Bioinformatics Conference (APBC 2007)**

*Organizing Committee Member (Local Arrangement and Tutorials)*

#### **Online Course Development and Management – FIT**

*Course Coordinator & Lecturer (09/98 – 06/00)*

- FIT is a university-wide introductory IT course.
- Managed a team of 4 instructors and about 10 student helpers to develop a new web-based online course within 3 months for all year 1 students in the University.
- Managed a team of 4 instructors for teaching over 1,000 students
- Managed a computer-based examination with flexible examination sessions available throughout the academic year

#### **User-Friendly Flexi-IT Approach for Education (UFIA) project**

*Project Manager (Teachers' IT Training) (09/98 – 06/00)*

- UFIA was funded by the Quality Education Fund of the Government of HKSAR.
- Managed a team of programmers and instructors for developing web-based IT training materials for teachers from 13 primary schools and delivering training courses to these teachers.

#### **ASM Assembly Automation Ltd.**

*A member of the software testing consultancy team (09/98 – 01/99)*

- to provide consultancy related to software quality methodologies that could improve our software product quality and the effectiveness of our software development process.

#### **BSc(BioInf) Undergraduate Programme**

*Programme Coordinator (10/01 – Now)*

- The programme is jointly offered by the Department of Computer Science and the Department of Biochemistry.
- Proposed several new undergraduate courses “Foundations in BioComputing” and “Concepts and Tools for Software Development” and two new master courses “Computer Technologies for Bioinformatics” and “Computational Molecular Biology”.