

GIW 2002 Advanced Program

Registration The Garden Hall entrance

December 16, 2002 : 13:00 – 17:20

December 17, 2002 : 09:00 – 18:30

December 18, 2002 : 09:00 – 16:45

Monday, December 16, 2002 The Garden Hall

Opening Address

14:00 - 14:10 Richard H. Lathrop (UC Irvine)

Paper Session 1 Data Mining from Genomes

Chair: Limsoon Wong (LIT)

14:10 - 14:35 *A String Pattern Regression Algorithm and Its Application to Pattern Discovery in Long Intron*, Hideo Bannai¹, Shunsuke Inenaga², Ayumi Shinohara^{2,3}, Masayuki Takeda^{2,3}, Satoru Miyano¹ (¹U. Tokyo, ²Kyushu U., ³JST)

14:35 - 15:00 *A Novel Bioinformatic Strategy for Unveiling Hidden Genome Signatures of Eukaryotes: Self-Organizing Map of Oligonucleotide Frequency*, Takashi Abe^{1,2,3}, Shigehiko Kanaya^{3,4,5}, Makoto Kinouchi^{3,5,6}, Yuta Ichiba^{1,3}, Tokio Kozuki^{2,3}, Toshimichi Ikemura^{1,3} (¹NIG, ²Xanagen, ³ACT-JST, ⁴NAIST, ⁵CREST JST, ⁶Yamagata U.)

15:00 - 15:25 *Detection of Periodicity in Eukaryotic Genomes on the Basis of Power Spectrum Analysis*, Atsushi Fukushima¹, Toshimichi Ikemura², Taku Oshima¹, Hirotada Mori¹, Shigehiko Kanaya¹ (¹NAIST, ²SOKEN)

15:25 - 15:50 *Analysis of Common k-mers for Whole Genome Sequences Using SSB-Tree*, Jeong-Hyeon Choi, Hwan-Gue Cho (Pusan Nat'l U.)

Break 15:50-16:05

Paper Session 2 Functional Genomics

Chair: Takatoshi Kawai (Eizai Co., Ltd.)

16:05 - 16:30 *Large Scale Statistical Prediction of Protein-Protein Interaction by Potentially Interacting Domain (PID) Pair*, Wan Kyu Kim (Object Interaction Tech. Inc.), Jong Park (Cambridge U.), Jung Keun Suh (LG Life Sci., Ltd.)

16:30 - 16:55 *A Comparative Study on Feature Selection and Classification Methods Using Gene Expression Profiles and Proteomic Patterns*, Huiqing Liu, Jinyan Li, Limsoon Wong (LIT)

16:55 - 17:20 *Extraction of Organism Groups from Phylogenetic Profiles Using Independent Component Analysis*, Yoshihiro Yamanishi, Masumi Itoh, Minoru Kanehisa (Kyoto U.)

Tuesday, December 17, 2002 The Garden Hall

Paper Session 3 Evolution

Chair: Sang Yup Lee (KAIST)

- 09:00 - 09:25 *Origin of Most Primitive mRNAs and Genetic Codes via Interactions between Primitive tRNA Ribozymes*, Koji Ohnishi, Shouken Hokari, Hiroshi Shutou, Madoka Ohshima, Naotaka Furuichi, Masaki Goda (Niigata U.)
- 09:25 - 09:50 *Very Fast Algorithms for Evaluating the Stability of ML and Bayesian Phylogenetic Trees from Sequence Data*, Peter J. Waddell (U. South Carolina), Hirohisa Kishino (U. Tokyo), Rissa Ota (Massey U.)
- 09:50 - 10:15 *An Algorithmic Analysis of the Role of Unequal Crossover in Alpha Satellite DNA Evolution*, Can Alkan, Jeffrey A. Bailey, Evan E. Eichler, S. Cenk Sahinalp, Eray Tuzun (Case West. Reserve U.)
- 10:15 - 10:40 *Genomic Sorting with Length-Weighted Reversals*, Ron Y. Pinter (Israel Inst. Tech.), Steven Skiena (State U. NY)

Break 10:40 - 10:55

Keynote Address

Chair: Tetsuo Nishikawa (Hitachi, Ltd.)

- 10:55 - 11:55 *Comparative Genomics for Understanding Ourselves*
Yoshiyuki Sakaki (RIKEN)

Lunch Break 11:55 - 13:25

Keynote Address

Chair: Kiyoshi Asai (CBRC)

- 13:25 - 14:25 *Inferring Gene Transcription Networks: The Davidson Model*
Sorin Istrail (Celera Genomics)

Paper Session 4 Algorithms

Chair: Tatsuya Akutsu (Kyoto U.)

- 14:35 - 15:00 *Marginalized Kernels for RNA Sequence Data Analysis*, Taishin Kin, Koji Tsuda, Kiyoshi Asai (CBRC)
- 15:00 - 15:25 *Aligning Multiple Protein Sequences by Parallel Hybrid Genetic Algorithm*, Hung Dinh Nguyen¹, Ikuo Yoshihara¹, Kunihito Yamamori¹, Moritoshi Yasunaga² (¹Miyazaki U., ²U. Tsukuba)
- 15:25 - 15:50 *Inference of Euler Angles for Single Particle Analysis by Using Genetic Algorithms*, Shusuke Saeki¹, Kiyoshi Asai², Katsutoshi Takahashi², Yutaka Ueno², Katsunori Isono³, Hitoshi Iba¹ (¹U. Tokyo, ²CBRC, ³INTEC W&G Informatics Corp.)

Break 15:50 -

JSBi Annual Meeting

16:00 - 16:30 General Meeting

Poster and Software Demonstrations Session 1

16:30 - 18:30 (JSBi Session, The Garden Hall Foyer)

Social Events

Award Ceremony & Banquet

18:30 - 21:00 (The Garden Room)

Wednesday, December 18, 2002 The Garden Hall

Paper Session 5 Structural Biology

Chair: Alfonso Valencia (CNB-CSIC)

- 09:00 - 09:25 *Point Matching Under Non-Uniform Distortions and Protein Side Chain Packing Based on an Efficient Maximum Clique Algorithm*, Dukka Bahadur K. C.¹, Tatsuya Akutsu¹, Etsuji Tomita², Tomokazu Seki², Asao Fujiyama³ (¹Kyoto U., ²U. Electro-Comm, ³NII)
- 09:25 - 09:50 *The Role of DNA Deformation Energy at Individual Base Steps for the Identification of DNA-Protein Binding Sites*, Nicholas R. Steffen, Scott D. Murphy, Richard H. Lathrop, Michael L. Opel, Lorenzo Toller, G. Wesley Hatfield (UC Irvine)
- 09:50 - 10:15 *Folding Pattern Recognition in Proteins Using Spectral Analysis Methods*, Carlos A. Del Carpio Muñoz, Julio Cesar Carbajal L. (Toyohashi U. Tech.)

Poster and Software Demonstrations Session 2

10:15 - 12:15 (JSBi Session, The Garden Hall Foyer)

Lunch Break 12:15 -14:00

Paper Session 6 Sequence Analysis

Chair: Makiko Suwa (CBRC)

- 14:00 - 14:25 *Comparative Analysis of the Genomes of Cyanobacteria and Plants*, Naoki Sato (Saitama U.)
- 14:25 - 14:50 *A Novel Index which Precisely Derives Protein Coding Regions from Cross-Species Genome Alignments*, Hideki Noguchi¹, Tetsushi Yada¹, Yoshiyuki Sakaki^{1,2} (¹RIKEN, ²U. Tokyo)
- 14:50 - 15:15 *Using Feature Generation and Feature Selection for Accurate Prediction of Translation Initiation Sites*, Fanfan Zeng¹, Roland H.C. Yap¹, Limsoon Wong² (¹Nat'l U. Singapore, ²LIT)

Break 15:15 -15:30

Paper Session 7 Systems Biology / Ontology

Chair: Takako Takai (U. Tokyo)

- 15:30 - 15:55 *Automatic Ontology Construction from the Literature*, Christian Blaschke, Alfonso Valencia (CNB/CSIC)
- 15:55 - 16:20 *In Silico Metabolic Pathway Analysis and Design: Succinic Acid Production by Metabolically Engineered Escherichia coli as an Example*, Sang Yup Lee, Soon Ho Hong, Soo Yun Moon (KAIST)
- 16:20 - 16:45 *Physical Modeling of the Cellular Arrangement in C. elegans Early Embryo: Effect of Rounding and Stiffening of the Cells*, Atsushi Kajita^{1,2}, Masayuki Yamamura², Yuji Kohara¹ (¹NIG, ²Tokyo Inst. Tech.)

Closing 16:45 -16:55