Dept. of Computer Science
Tel Aviv University
February 2000

Algorithmic Problems in the Human Genome Project – Seminar Syllabus and Schedule

Instructor: Prof. Ron Shamir

The seminar will concentrate on algorithmic problems in **Gene Expression and Gene Network analysis**. The developments in these research areas are closely tied to novel ``DNA chips" technologies.

Key references: Marshall and Hodgeson (98) and "The Chipping Forecast" (99) give overviews of chip technology with an emphasis on the companies and products. The webpage http://www.math.tau.ac.il/~shamir/algmb/algmb98.html contains my lecture notes from the course "Algorithms in Molecular Biology" and includes basic references on computational biology.

In certain biological papers the algorithmic details are given only in references to earlier papers. The speaker should trace back to find the details of the algorithms, and include them in his/her talk.

No	Date	Speaker	Papers	Comments
Clustering and Classification				
1	Feb. 27	Ofer Zinger	Hartuv et al (99), Hartuv-Shamir (99)	cDNA clustering (HCS)
2	March 5	Elena Zotenko	Ben-Dor, Shamir, Yakhini (99); Wen et al (98)	BioClust FITCH (CNS development)
3	March 12	Yaniv Shmueli	Tamayo et al (99) Toronen et al (99)	GENECLUSTER (SOM) hematopoietic differentiation
4	March 26	Elad Rozin	Eisen et al (98) Iyer et al (99) Alizadeh et al (00)	Hierarchical clustering Fibroblast serum response Lymphoma classification
5		cancelled	Raychaudhuri et al (00) Chu et al (98)	PCA Yeast Sporulation
6	April 2	Yohai Falik	Slonim et al (00) Golub et al (99)	Leukemia classification
7	April 30	Ayelet Shahar	Alon et al (99)	Deterministic Annealing Colon cancer identification
8	May 3	Uri Unger	Ben-Dor et al (00)	Classification

No	Date	Speaker	Papers	Comments
	Clustering and Classification			
	(**Wed**)			
9	May 17 (**Wed**)	Shai Shen-Orr	Yona et al (99) Krause et al (00)	ProtoMap SYSTERS
	Gene Networks			
10	May 21	Iddo Gerbinski	Akutsu et al (98)	
11	May 28	Ittai Fonio	Chen, Filkov & Skiena (99); Cho et al (98)	Mitotic cell cycle
12	May 31	Adi Akavia	Karp, Stoughton & Yeung (99)	
13	June 4	Oranit Shem-Tov	Ideker, Thorsson & Karp (00)	

NOTES:

(1) ***Dates are tentative and can change with short notice*** . Updates will be announced in class.

(2) ***References for lectures 7-13 are incomplete*** and additional complementary papers may be added.

(3) All lectures on Sunday are in Schreiber 209. The rooms for the lectures on other dates will be announced in class.