Relational Database Theory at Princeton and Beyond

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In the Beginning

- Dennis Tsichritzis (Toronto) goes to IBM Yorktown Heights for the summer to work on OS. Finds database work with Frank King, Don Chamberlin and Ray Boyce more interesting (1973).
- Returns to Toronto, announces to OS group (including Phil Bernstein) that they are now the DB group.
- Phil does PhD on 3NF synthesis (1975), remains at UT as a postdoc.
- Catriel Beeri arrives at Toronto for a postdoc (75-76), shares an office with Phil. Switches from automata to database theory.

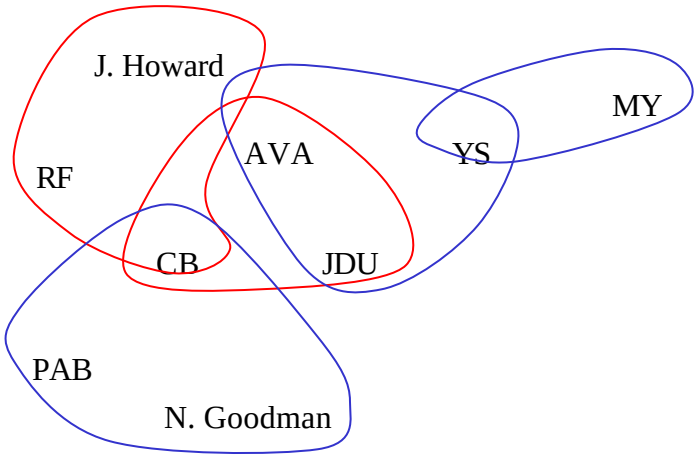
The Word Spreads

- Phil goes to Harvard (1976)
- Catriel goes to Princeton (1976), teaches DB class, gets Ullman and Aho interested in relational databases
- Most of Ullman's PhD students start working on relational database theory

Early topics:

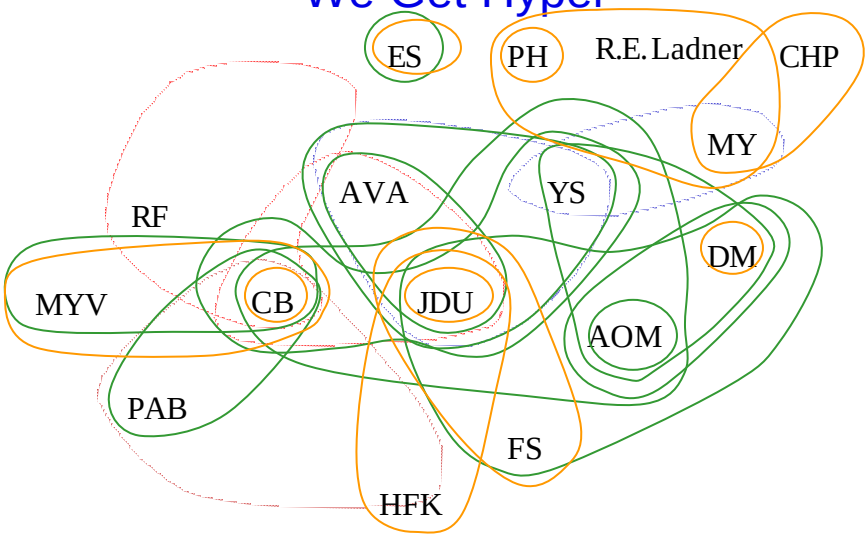
- Axiomatization of dependencies
- Inference of lossless joins
- Query containment and equivalece

First Papers



1977 1978

We Get Hyper



1977 1978 1979 1980

1979-80 Topics

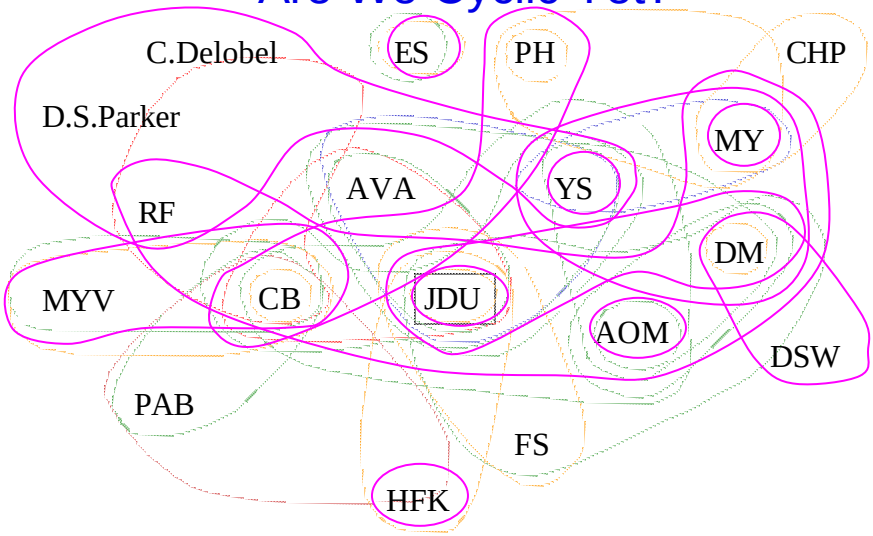
1979

- Join dependencies, mutual dependencies
- Schema decomposition and equivalence
- Inference algorithms, chase
- Expressive power of languages
- Normal forms

1980

- Real-world dependencies
- Decision problems, satisfaction testing
- MVDs, algebraic dependencies, template dependencies
- Extension joins
- Universal instance, System U
- Jeff's book

Are We Cyclic Yet?

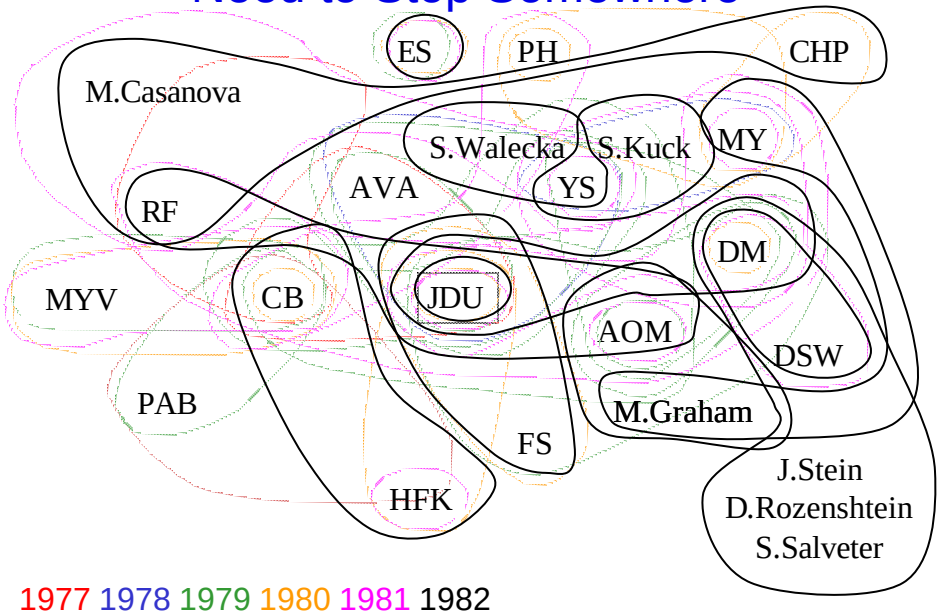


1977 1978 1979 1980 1981

1981 Topics

- Acyclic database schemes
- Universal instance
- Dependency-preserving decomposition
- Horizontal decomposition
- Real-world MVDs
- Dependencies and logic
- Computed relations
- Implication problems, complexity results

Need to Stop Somewhere



1982 Topics

- Universal relation querying, connections, implementation
- Inclusion dependencies
- Embedded dependencies
- Combinations (FDs + IDs, FDs + TDs)
- Strong equivalence
- Independent schemas

XP Workshops

XP1, Stony Brook, 1980

- New faces: B. Jacobs, A. Chandra, Y. Vassiliou, A. Walker
- Topics: Logic & databases, decision problems, embedded dependencies, query complexity, fast FD testing, universal instances, nulls, lossless joins, chase

XP2, Penn State, 1981

- New faces: J. Biskup, R. Hull, B. Goldstein, J. Clifford, O. Shmueli, J. Grant, J. Minker, J. Paredaens, A. Klug, V. Vianu, P. Fischer, K. Chase
- Topics: Maybe ops, Acyclic JDs, BCNF, UIs, states & tableaux, time and sequence models, DB state reductions, tree schemas, families of FDs

(PODS 1, 1982)

XP Workshops

XP4.5, Stanford, 1983

- New faces: S. Cosmadakis, P. Kanellakis, S. Ceri, T. Imielinski
- Topics: Prolog and databases, FDs & IDs, distributed DBs, view maintenance, 2nd-order dependency theory, updates

XP7.52, UT Austin, 1986: The Great Divide

- New faces: S. Naqvi, M.Kifer, D. Van Gucht, G.Kuper, M. Ozsoyoglu, J. Naughton, F. Bancilhon, R. Ramakrishnan, L. Ness, J. Banerjee, N. Rishe
- Topics: Logic w/ negation & sets, complex objects, nested models, OODBs, logic queries, object histories, recursive QP strategies, schema evolution

XP8.5i, OGI, 1987 (imaginary prcdgs.): Reunification