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Call For Participation

VLDB'99

25th International Conference
on Very Large Databases

Edinburgh, Scotland, UK
September 7th - 10th 1999

NAPIER UNIVERSITY
EDINBURGH

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Ron Sacks-Davis, RMIT, Australia
Rodney Topor, Griffith Uni., Australia
Kyu-Young Whang, Korea Advanced Institute of Science and Technology, Korea

Further Information

Clansman Monarch Ltd. are pleased to act as conference secretariat for VLDB'99.

If you require additional details about the conference registration, hotels, tours etc. please fax, write or email:

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Fax: +44 (0)131 624 7277
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<http://www.clansman.com/contact.html>

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Invitation to attend VLDB'99

VLDB'99, Edinburgh, UK marks the 25th anniversary of the leading international conference on databases. VLDB'87 was also held in UK (at Brighton) and was one of the largest VLDB conferences and produced some of the most cited VLDB papers. We expect VLDB'99 to be no less successful. For database technology practitioners and theorists VLDB'99 is not to be missed.

The conference has an excellent programme of Tutorials, Panels and Invited Talks, and the selection of papers to be presented from the many submitted will ensure – as usual for VLDB – the highest quality. A programme of demonstrations ensures awareness of the leading edge R&D and the exhibition provides an opportunity to see and discuss products. Furthermore, there are workshops and events organised before and after the conference, so making the travel to attend VLDB'99 even more worthwhile.

VLDB'99 is being held in Edinburgh, a city world-renowned for its beauty, style, culture and nightlife. VLDB'99 is being held just after the Edinburgh Festival – a truly amazing collection of art, drama, music, revue and cinema. Edinburgh can be reached easily – see the VLDB99 website for details. VLDB'99 attendees will find themselves not only at an interesting spatial location; the temporal location is also important as Scotland gains some level of independence from the rest of the UK through devolution. This is the time to visit Edinburgh, Scotland's capital city.

The VLDB Social programme has also been carefully arranged to provide attendees not only with a taste of Edinburgh and Scotland, but also those opportunities for discussion and conversation so necessary to the advancement of database technology and to the maintenance and further building of the community.

So, on behalf of the Programme Committee led by Malcolm Atkinson and the Organising Committee led by Jessie Kennedy it is my pleasure to invite you to attend VLDB'99. Registration details, and details of travel, accommodation, programme and social programme are to be found in this Call for Attendance or on the VLDB'99 Website <http://www.dcs.napier.ac.uk/~vldb99/>

I look forward to meeting you in Edinburgh

Keith G Jeffery
General Conference Chair VLDB'99

Provisional Conference Programme

Time	Fintry Auditorium	Pentland Auditorium	Sidlaw Auditorium	Harris Room
Tuesday 7 th September				
09:15	Welcome Ceremony - Pentland Auditorium			
09:30	10 Year Award Talk - Pentland Auditorium C. Mohan, IBM Almaden Research Center <i>Repeating History Beyond ARIES</i>			
10:30	Tea/Coffee - Lomond Suite			
11:00	Paper Session 1 Aggregation, Approximation & Explanation	Tutorial 1 Semistructured Data to XML	Paper Session 2 Main-Memory Caching	
12:30	Lunch Break			
14:30	Paper Session 3 Changes and Temporal Data	Tutorial 1 cont. Semistructured Data to XML	Paper Session 4 Distributed Databases	
16:00	Tea/Coffee - Lomond Suite			
16:30	Paper Session 5 Data Mining Algorithms	Industry Session 1 Data Management in a Networked World	Tutorial 2 Metasearch Engines	
18:00	Reception - Strathblane Hall			
Wednesday 8 th September				
09:00	Paper Session 6 Data Mining & Pattern Extraction	Industry Session 2 Microsoft SQL Server Innovations	Tutorial 2 continued Metasearch Engines	Scheduled 30-minute Demos
10:30	Tea/Coffee - Lomond Suite			
11:00	Keynote Address - Pentland Auditorium Dr Karl-Heinz Hess, SAP AG <i>SAPNet - The Infrastructure for Business on the Web</i>			
12:30	Lunch Break			
14:30	Paper Session 7 Understanding DB Performance	Tutorial 3 Using SQLJ	Paper Session 8 Semistructured Data & XML Queries	
16:00	Tea/Coffee - Lomond Suite			
16:30	Paper Session 9 Caching Techniques	Tutorial 3 continued Using SQLJ	Paper Session 10 Document Classification & IR	
19:30	Scottish Evening - Assembly Rooms			

VLDB'99 Disclaimer

We are putting our best efforts into organising VLDB'99, to make it an enlightening and enjoyable experience for participants. However, neither the VLDB endowment nor the local organisers take any responsibility for any damage, loss or inconvenience participants might incur in connection with the conference. We also cannot be held responsible for the correctness or appropriateness of the contents of the talks and papers included in this conference.

In particular, changes to the published conference program or cancellations of parts thereof do not entitle participants to a refund of the conference fee or parts thereof.

Names/addresses of attendees will be electronically processed and included in a participant's list that may be posted/distributed during and in connection with the conference. By registering for the conference, participants express their agreements with these regulations.

Accompanying Person's Tours

Monday 6th September - The Borders

To the world famous Edinburgh Crystal Factory, situated on the outskirts of Edinburgh for a guided tour and the opportunity to witness first-hand every aspect of the traditional skills of dedicated craftsmen that give Edinburgh Crystal its scintillating sparkle and hallmark of quality. Onwards to the market town of Peebles for lunch then to Traquair House - the oldest inhabited home in Scotland dating from 12th century that houses relics from the twenty-seven Scottish and English monarchs who visited. Ale was regularly produced in the 18th century brewhouse and craft workshops have a variety of intriguing products.

Cost per person - £39.00 (includes coach travel, professional guide, admission charges and lunch)

Tuesday 7th September - Glenkinchie Whisky Distillery (Half day)

Glenkinchie Distillery is situated at the foot of the Lammermuir Hills, approximately 40 minutes coach journey from Edinburgh. Founded by a Lowland farmer in 1840, the distillery continues to adopt the traditional methods of distillation - with just a little help from modern technology. Guests are shown around the museum and distillery, witnessing each aspect of this time-honoured process. After the tour, guests enjoy a wee dram of the fine single malt whisky produced.

Cost per person - £15.00 (includes coach travel, admission and whisky tasting)

Wednesday 8th September – St Andrews & The Kingdom of Fife

Departing from Edinburgh and travelling north over the River Forth with spectacular views of the century-old rail bridge, you will pass through the historic county of Fife through the picturesque fishing villages of Pittenweem, Anstruther and Crail until you reach St. Andrews, home of golf and Scotland's oldest university. In St. Andrews there will be a walking tour of the university buildings, the ruined castle and cathedral as well as the Royal and Ancient Golf Club. Following lunch you will be transported to Falkland Palace, hunting home of the Royal Stewart family and a much loved house of Mary, Queen of Scots.

Cost per person - £38.00 (includes coach travel, professional guide, admissions to visitor attractions, lunch)

Thursday 9th September - Perthshire

Driving over the modern Forth Road Bridge, with spectacular views of the hundred-year-old rail bridge, we will head for Perth to visit Scone Palace. Scone, the historic coronation palace of Scotland's kings, is now the home of the Earl of Mansfield. Here you can tour this magnificent house and walk in the extensive grounds. Onwards to Crieff for lunch followed by a visit to Glenturret Distillery. A guided tour of the various stages of production is followed with a tasting of the finished product.

Cost per person - £40.00 (includes coach travel, professional guide and admissions to attractions and lunch)

Provisional Conference Programme

Time	Fintry Auditorium	Pentland Auditorium	Sidlaw Auditorium	Harris Room
Thursday 9 th September				
09:00	Paper Session 11 Partial Query Evaluation	Tutorial 4 A Database Centric Update on CORBA	Paper Session 12 Integrating Heterogeneous Databases	Scheduled 30-minute Demos
10:30	Tea/Coffee - Lomond Suite			
11:00	Paper Session 13 Implementing Advanced Data Models	Tutorial 4 continued A Database Centric Update on CORBA	Paper Session 14 High-dimensional Queries	
12:30	Lunch Break			
14:30	Paper Session 15 Extending SQL with User Defined types	Industrial Session 3 Industrial Session On Data Warehouses	Tutorial 5 Design and Perception in Information Visualisation	
16:00	Tea/Coffee - Lomond Suite			
16:30	Paper Session 16 High-performance Application Support	Panel Active Storage Hierarchy, Database Systems and Applications	Tutorial 5 continued Design and Perception in Information Visualisation	
19:00	Conference Banquet - Royal Museum of Scotland			
Friday 10 th September				
09:00	Paper Session 17 Databases and the Web	Paper Session 18 Aggregation Algorithms	Paper Session 19 Query Systems	
10:30	Tea/Coffee - Lomond Suite			
11:00	Keynote Address - Pentland Auditorium Dr Stephen DeRose, Chief Scientist, Inso Corporation <i>What Do Those Weird XML Types Want, Anyway?</i>			
12:30	Closing Ceremony - Pentland Auditorium			

Invited Talks

Keynote Address - Dr Karl-Heinz Hess, SAP AG
SAPNet - The Infrastructure for Business on the Web
Wednesday 8th September, 11:00-12:30, Pentland Auditorium

Karl-Heinz Hess, a member of the SAP AG Extended Executive board since 1996, is responsible for the development and integration of systems technology. Hess, who joined SAP in 1980 as a database specialist, has made significant contributions to the architecture of R/3. In this capacity he has been instrumental in building and consolidating the relationships between SAP and its technology partners.

Prior to joining SAP, Hess substantially contributed to the development of ADABAS and NATURAL at Software AG. At the beginning of his professional career he developed database applications for Siemens. Hess holds a degree in computer science from the University of Karlsruhe.

Keynote Address - Steve DeRose, Chief Scientist, Inso Corporation, Adjunct Associate Professor, Brown University, Scholarly Technology Group
What Do Those Weird XML Types Want, Anyway?
Friday 10th September, 11:00-12:30, Pentland Auditorium

Steve DeRose's research with document structures began in 1979 when he joined the FRESS hypermedia project as an undergraduate at Brown University. His combined interests in natural language processing, classical and Biblical literature, and document processing have kept him near the centre of the emergence of documents as machine-accessible structures. In 1989 he completed his PhD in Computational Linguistics, working with the developers of the first large-scale natural language corpus on dynamic programming approaches to assigning parts of speech via Hidden Markov Models. After graduate school he co-founded Electronic Book Technologies (EBT), whose DynaText system became the leading software for delivering and searching big SGML documents: from aircraft, telecommunications, and power industry manuals to poetry collections.

EBT is now part of Inso Corporation. In his role as Chief Scientist at Inso and at Brown's Scholarly Technology Group, he is active in a wide range of standards efforts centering on document representation, hypertext, metadata, and query languages. He is a charter member of the XML Working Group and coeditor of the W3C XLink and XPointer specifications. He is a frequent speaker in industry and academe, and has written many papers, two books and three patents. He now lives, works and ice-skates in Maryland.

VLDB'99 Additional Tours

Scotland has much to offer and you can be sure of a typically warm Scottish welcome. We have organised a number of daily excursions and a post conference tour for your enjoyment. Please mark your interest on the registration form.

Please note that details and prices are correct at the time of going to press. Should there be insufficient interest, the committee reserves the right to cancel tours if necessary. The limit of liability is restricted to a refund of any money paid.

Post Conference Tour

Friday 10th September

Departing Edinburgh, we travel north across the Forth Road Bridge to the Kingdom of Fife then onwards into scenic Perthshire. Here we visit Scone Palace, ancient crowning place of Scottish kings and home to the Earls of Mansfield, before continuing through the Grampian Mountains to a highland whisky distillery for a guided tour and a "wee dram". Heading through the Drumochter Pass and along the banks of Loch Lagagan, we arrive at the Alexandra hotel, Fort William (or similar) for dinner and overnight, 2 nights.

Saturday 11th September

This morning we head through the mountains and glens aboard a train on the famous West Highland Railway as we journey towards the Isle of Skye - an enchanting island with craggy coasts and breathtaking panoramas. We board a modern ferry at Mallaig for a 30 minute crossing to Armadale, then tour the southern part of the island before returning to the mainland via the Skye bridge, stopping off to visit Eilean Donan Castle en route to Fort William.

Sunday 12th September

After breakfast, we take a 15 minute gondola ride up Aonach Mor from where we can admire the surrounding landscape with views to the Isle of Skye. Departing Fort William, we head through infamous, yet majestic Glencoe before the gentle, romantic shores of Loch Lomond welcome us back to the Lowlands, arriving in Glasgow at 17h30 and Edinburgh at 18h30.

Tour includes:

- Entrance fees to all visitor attractions as per the itinerary
- Sightseeing by executive coach
- Professional guide throughout
- All ferry, train & bridge fares
- Tourist class accommodation on a dinner bed and breakfast basis

Price: £210 per person sharing twin/double accommodation
£245 per person in single accommodation

Tailors Hall

This new hotel is one of the city's oldest and most important a-listed buildings. All 42 rooms are ensuite with modern decor and include a PC modem point.

Jurys Edinburgh Inn

Jurys Edinburgh Inn is centrally located on Jeffery Street, adjacent to the historic Royal Mile and Princes Street and only a few minutes walk from Waverley train station. It is the perfect choice for the business or leisure traveller with all major venues and tourist attractions within easy walking distance.

Parliament House Hotel

Tastefully refurbished to a very high standard, all of the 54 guestrooms offer the discerning traveller a host of facilities. Guests can enjoy continental breakfast in the privacy of their own room. The absence of restaurant facilities adds to the peace and quiet of this secluded hotel, however there is a wide variety of excellent cafes and restaurants within the area.

Simpsons Hotel

Simpson's is a tastefully furnished hotel with a modern interior and comfortable bedrooms. It is about 10 minutes walk from the EICC and is also in easy reach of the financial district and main shopping areas, with Edinburgh Castle and Princes Street only a short walk away. The hotel has a residents licence and continental breakfast is served in the privacy of the guest's own room.

Thistle Court Hotel

The hotel affords both accessibility to the city centre and the privacy enjoyed by being slightly removed from the nucleus. Car parking is available in the forecourt. The hotel is privately owned and many original features of this fine Victorian house have been retained ensuring a warm, friendly ambiance. The hotel serves continental breakfast and all rooms have ensuite facilities, complete with power shower, direct dial telephone and colour television, hair dryer, trouser press and tea/coffee making facilities. A number of rooms are designated nonsmoking.

Pollock Halls

Pollock Halls offer a wide range of modern comfortable accommodation. All the single rooms and rooms with double size bed have telephone and tea/coffee making facilities. The newly refurbished John McIntyre Centre, centrally located, offers both traditional Scottish and international cuisine. A full Scottish breakfast will set you up for the day and is included in the overnight tariff.

Self Catering Accommodation

Napier University has a complex of self-catering flats situated within 5 minutes walk of the Edinburgh International Conference Centre. They can sleep up to 3 persons in single rooms. Price includes booking fee per person.

10 Year Award Talk - C. Mohan, IBM Almaden Research Center Repeating History Beyond ARIES

Tuesday 7th September, 09:30-10:30, Pentland Auditorium

The programme committee is pleased to recognise the significant contribution of the VLDB'89 paper "*Exploiting the ARIES recovery algorithms for Nested Transactions*" Mohan C. & Rothermel K. by awarding it the prestigious Ten Year Paper Award.

The techniques of logical log records, log compensation records and re-establishing the state prior to a crash, before undoing the work of transactions that do not complete, has proved to be of wide-ranging importance and significance, for instance, in enhancing the robustness of Lotus Notes as well as many major DBMS.

We are delighted that the creator of ARIES, C. Mohan will present an invited talk "*Repeating History Beyond ARIES*" which will explain why ARIES has had such an impact, and will examine the way ahead for durable and recoverable systems.

This talk reviews the history of logging and recovery in DBMSs and explains what led to the development of the original ARIES recovery method and briefly introduces the various recovery and concurrency control methods in the ARIES family. In ARIES, the concept of repeating history turned out to be an important paradigm. Examining where transaction management is headed in the world of the Internet, history has repeated itself in the sense of requirements that used to be considered significant in the mainframe world (e.g., performance, availability) are now becoming important requirements in the broader information technology community as well. The talk also discusses some of the recent developments affecting the transaction management area and what these mean for the future.

Dr. C. Mohan joined IBM Almaden Research Center in 1981. He was named an IBM Fellow in 1997 for being recognised worldwide as a leading innovator in transaction management. He received the 1996 ACM SIGMOD Innovations Award in recognition of his innovative contributions to the development and use of database systems. He has received from IBM 1 Corporate and 7 Outstanding Innovation Awards. He is an IBM Master Inventor with 32 patents. His research results are implemented in numerous IBM and non-IBM products and prototypes. He is the primary inventor of the ARIES family of recovery and locking methods, and the industry-standard Presumed Abort commit protocol. He was Program Chair for VLDB96 and HPTS87. He is an editor of VLDB Journal, and Distributed and Parallel Databases - An International Journal. He received a BTech (1977) from IIT Madras and a PhD (1981) from UT Austin.

Paper Sessions

Paper Session 1: Aggregation, Approximation & Explanation

Tuesday 7th September, 11:00-12:30, Fintry Auditorium

Online Feedback for Nested Aggregate Queries with Multi-Threading

Tan K-L., Goh C.H. & Ooi B.C.

Generalised Hash Teams for Join and Group-by

Kemper A., Kossmann D. & Wiesner C.

Explaining Differences in Multidimensional Aggregates

Sarawagi S.

Paper Session 2: Main-Memory Caching

Tuesday 7th September, 11:00-12:30, Sidlaw Auditorium

Database Architecture Optimized for the New Bottleneck: Memory Access

Boncz P., Manegold S. & Kersten M.

The Persistent Cache: Improving OID Indexing in Temporal Object-Oriented

Database Systems

Nørvag K.

Cache Conscious Indexing for Decision-Support in Main Memory

Rao J. & Ross K.

Paper Session 3: Changes and Temporal Data

Tuesday 7th September, 14:30-16:00, Fintry Auditorium

Comparing Hierarchical Data in External Memory

Chawathe S.S.

Mining Deviants in a Time Series Database

Koudas N., Muthukrishnan S. & Jagadish H.V.

Exploiting Versions for Handling Updates in Broadcast Disks

Pitoura E. & Chrysanthisi P.K.

Paper Session 4: Distributed Databases

Tuesday 7th September, 14:30-16:00, Sidlaw Auditorium

Fast Algorithms for Maintaining Replica Consistency in Lazy Master Replicated Databases

Pacitti E., Minet P. & Simon E.

Active Views for Electronic Commerce

Abiteboul S., Amann B., Cluet S., Eyal A., Mignet L. & Milo T.

An Adaptive Hybrid Server Architecture for Client Caching ODBMSs

Voruganti K., Ozsu M.T. & Unrau R.

Paper Session 5: Data mining Algorithms

Tuesday 7th September, 16:30-18:00, Fintry Auditorium

Dynamic Load Balancing for Parallel Association Rule Mining on Heterogenous PC Cluster Systems

Tamura M. & Kitsuregawa M.

Histogram-Based Approximation of Set-Valued Query-Answers

Ioannidis Y. & Poosala V.

Hotel Information

The Caledonian

Discerning service and supreme comforts in the classical heart of Edinburgh, Princes Street designer shops at your door and Scotland's glorious scenery can be seen over the horizons. An aura of grandeur fills bedrooms and suites that satisfy every aspiration. Many include a breathtaking view of Edinburgh Castle.

Stakis Grosvenor Hotel

Situated in the heart of Edinburgh, virtually all of the city's main attractions are within walking distance, making it the ideal venue for a business trip or leisurely break. The Stakis has 136 deluxe rooms including 18 family rooms, 1 suite and 33 executive club doubles. All rooms have en suite bathroom, satellite colour TV, telephone, trouser press and hospitality tray. The Dunedin Restaurant offers the best of fresh Scottish produce.

Carlton Highland Hotel

Carlton Highland Hotel is 4 star, 5 crown commended Hotel which offers 197 bedrooms, each tastefully decorated and providing all the comforts expected in a hotel. In addition, guests will appreciate the leisure and entertainment facilities in the hotel itself, with entry to the exclusive Minus One nightclub. Each bedroom has satellite TV, telephone, hairdryer, trouser press, private bathroom/shower, toiletries, mini bar and tea/coffee making facilities.

Frederick House

A quiet townhouse situated in the heart of Edinburgh, offering easy access to the airport and motorway networks. The EICC is within easy walking distance or a short taxi ride. Frederick House boasts 45 bedrooms with en-suite, satellite television, radio, refrigerators, tea and coffee making facilities, trouser press, direct dial phone and modem point.

Apex International Hotel

At the newly created Apex International Hotel the traditional service compliments a modern design with large light and airy rooms. It is located in the shadow of Edinburgh Castle at the Heart of the City's Old Town. All en-suite bedrooms are equipped with colour satellite television, direct dial telephone, hair dryer, clothes press, as well as tea and coffee making facilities. Most of the rooms are nonsmoking.

Point Hotel

Point Hotel is situated in the shadow of Edinburgh castle and is just minutes away from the financial district, shopping areas and the EICC. It provides high quality three star accommodation which includes 95 bedrooms comprising 5 luxury jacuzzi suites, 50 executive and 40 standard bedrooms with spectacular castle views. The highly documented Point restaurant and Point bar offer culinary delights.

Customs/Entry Regulations

EU and US citizens require a valid passport but no visa for a UK visit (however, we recommend checking with your travel agent at booking time).

Official information for all countries is held at The Foreign & Commonwealth Office. (http://www.fco.gov.uk/travel/imm_visas.asp).

Time Zone

Edinburgh is located in Greenwich Mean Time Zone, however during the conference we will be in British Summer Time, which is GMT+1.

Useful Telephone Numbers

All numbers are for calls originating within the UK. For calls made outside the UK add 44 and remove the initial "0".

Airports and Airlines

Aviation.uk.com	http://www.aviation.uk.com/airports.html
BAA	http://www.baa.co.uk/
Edinburgh Airport	0131 333 1000 (links to these airports can be found
Glasgow Airport	0141 887 1111 at the above web sites)
London Gatwick Airport	01293 535353
London Heathrow Airport	0181 759 4321
London Luton Airport	01582 405100
Air France	0131 333 5050 http://www.airfrance.com/
Air UK	0345 666777 (reservations) 0131 344 3325 (enquiries)
British Airways	0345 222111 http://www.british-airways.com
British Midland	0345 554554 (reservations) http://www.iflybritishmidland.com/
Continental Airlines	http://www.flycontinental.com/
Delta Air Lines	0800 414767 http://www.delta-air.com/
Easy Jet	01582 702900 http://www.easyjet.com
Go-fly	http://www.go-fly.com/
KLM	http://www.klmuk.com/
Sabena	0131 344 3222 http://www.sabena.com/

Trains

Rail Enquiries 0345 484950 <http://www.railtrack.co.uk>

Buses

Bus Station, Edinburgh 0131 558 1616
National Express 0990 808080 <http://www.nationalexpress.co.uk/>
Stagecoach 0141 333 1100
Traveline 0131 225 3858 (local service information)

Taxi Cabs

Capital Castle Taxis 0131 228 2555
Edinburgh Tourist Board 0131 557 1700 (general enquiries)
Clansman Monarch 0131 226 5222 <http://www.clansman.com/>
EICC 0131 300 3000 <http://www.eicc.co.uk/eicc.html>

Semantic Compression and Pattern Extraction with Fascicles
Jagadish H.V., Madar J. & Ng R.

Paper Session 6: Data Mining & Pattern Extraction

Wednesday 8th September, 09:00-10:30, Fintry Auditorium

Finding Intensional Knowledge of Distance-based Outliers

Knorr E. & Ng R.

SPIRIT: Sequential Pattern Mining with Regular Expression Constraints

Garofalakis M., Rastogi R. & Shim K.

A Novel Index Supporting High Volume Data Warehouse Insertion

Jermaine C., Datta A. & Omiecinski E.

Paper Session 7: Understanding Database Performance

Wednesday 8th September, 14:30-16:00, Fintry Auditorium

VOODB: a generic Discrete-Event Random Simulation Model To Evaluate the Performances of OODBs

Darmont J. & Schneider M.

DBMSs on a modern processor: Where does time go?

Ailamaki A., DeWitt D.J., Hill M.D. & Wood D.A.

Performance Measurements of Compressed Bitmap Indices

Johnson T.

Paper Session 8: Semistructured Data & XML Queries

Wednesday 8th September, 14:30-16:00, Sidlaw Auditorium

Capturing and Querying Multiple Aspects of Semistructured Data

Dyreson C.E., Böhlen M.H. & Jensen C.S.

Relational Databases for Querying XML Documents: Limitations and Opportunities

Shanmugasundaram J., Gang H., Tufte K., Zhang C., DeWitt D.J. & Naughton J.

Query Optimization for XML

McHugh J. & Widom J.

Paper Session 9: Caching Techniques

Wednesday 8th September, 16:30-18:00, Fintry Auditorium

Context-Based Prefetch for Implementing Objects on Relations

Bernstein P., Pal S. & Shutt D.

GHOST: Fine Granularity Buffering of Indexes

Goh C.H., Ooi B.C., Sim D. & Tan K-L.

Loading a Cache with Query Results

Haas L., Kossmann D. & Ursu I.

Paper Session 10: Document Classification and Information Retrieval

Wednesday 8th September, 16:30-18:00, Sidlaw Auditorium

Building Hierarchical Classifiers Using Class Proximity

Wang K., Zhou S. & Liew S.C.

Distributed Hypertext Resource Discovery Through Examples

Chakrabarti S., Van den Berg M. & Dom B.

Multi-Dimensional Substring Selectivity Estimation
Jagadish H.V., Kapitskaia O., Ng R.T. & Srivastava D.

Paper Session 11: Partial Query Evaluation

Thursday 9th September, 09:00-10:30, Fintry Auditorium

Evaluating Top-K Selection Queries

Chaudhuri S. & Gravano L.

Probabilistic Optimization of Top N Queries

Donjerkovic D. & Ramakrishnan R.

Combining Histograms and Parametric Curve Fitting for Feedback-Driven Query Result-size Estimation

König A. & Weikum G.

Paper Session 12: Integrating Heterogeneous Databases

Thursday 9th September, 09:00-10:30, Sidlaw Auditorium

Integrating Heterogenous Overlapping Databases through Object-Oriented Transformations

Josifovski V. & Risch T.

Quality-driven Integration of Heterogenous Information Systems

Naumann F., Leser U. & Freytag J. C.

Optimization for Physical Independence in Information Integration Components

Deutsch A., Popa L. & Tannen V.

Paper Session 13: Implementing Advanced Data Models

Thursday 9th September, 11:00-12:30, Fintry Auditorium

On Efficiently Implementing SchemaSQL on an SQL Database System

Lakshmanan L.V.S., Sadri F. & Subramanian S.

Unrolling Cycles to Decide Trigger Termination

Lee S.Y. & Ling T.W.

User-Defined Table Operators: Enhancing Extensibility for ORDBMS

Jaedicke M. & Mitschang B.

Paper Session 14: High-Dimensional Queries

Thursday 9th September, 11:00-12:30, Sidlaw Auditorium

Optimal Grid-Clustering: Towards Breaking the Curse of Dimensionality in High-Dimensional Clustering

Keim D. & Hinneburg A.

Similarity Search in High Dimensions via Hashing

Gionis A., Indyk P. & Motwani R.

What can Hierarchies do for Data Warehouses?

Jagadish H.V., Lakshmanan L.V.S. & Srivastava D.

Paper Session 15: Extending SQL with User Defined types

Thursday 9th September, 14:30-16:00, Fintry Auditorium

O-O, What Have They Done to DB2?

Carey M., Chamberlin D., Narayanan S., Vance B., Doole D., Rielau S.,

Swagerman R. & Mattos N.

No matter what kind of food you like there is bound to be a suitable restaurant in Edinburgh as there are such a wide range of restaurants and pubs. If visitors want to learn about beer in Edinburgh they can take a tour of the Caledonian Brewery, near to the EICC, which explains the brewing process and a chance to taste the different beers in the sample cellar. If your taste is for whisky, visitors can see how whisky is made, including a taste of different brands, at the Scotch Whisky Heritage Centre.

Sightseeing

There are many attractions to see in Edinburgh, many of which can be viewed on an open top bus tour. In close proximity to the EICC is Edinburgh Castle, Edinburgh's most popular attraction. The castle offers an insight into Scottish history, the Scottish Crown jewels and spectacular views over the city. If you time it right you can see and hear the one o'clock gun being fired. The nearby Outlook Tower with the Camera Obscura also offers spectacular birds eye views of the city. Holyrood Palace, Her Majesty the Queen's official residence in Scotland, is another popular visitor attraction. New to Edinburgh is the Dynamic Earth, which uses special effects and state of the art technology to tell the story of our planet, from its creation to the future.

For those visitors that don't want to see all the usual tourist attractions, Edinburgh offers a few, more unusual ones. The Witchery Tours - a tour through Edinburgh's closes, telling visitors about Burke & Hare, the hanging of witches and the darker side of Edinburgh's history. Another place with a sinister history is Mary Kings Close. This close lies beneath the City Chambers on the Royal Mile and has been built over since its original inhabitants died of the plague, some say the close is haunted.

If you don't have much time it is very pleasant to stroll around the city, either along the Royal Mile or Princess Street and just admire the beauty of the buildings or sit in Princess Street gardens and take in the surroundings. Edinburgh is always bustling at this time of year and there is always something to see and do.

Weather

The weather in Edinburgh is always unpredictable. It is advised that delegates not only bring summer wear, but also some warm clothes, a raincoat and umbrella. Comfortable walking shoes are always a good idea.

Banks and Currency Exchange

The United Kingdom's currency is the Pound Sterling. Currency exchanges are available at:

- All UK airports
- Edinburgh Waverley Rail Station
- Bureau's de change in Edinburgh

Delegates will also be able to exchange currency in most Edinburgh city centre banks. The nearest bank to the Edinburgh International Conference Centre (5 minutes walk) is The Bank of Scotland, 1 Castle Terrace, Edinburgh, open from 09.00 until 17.00, Monday to Friday, with the exception of Wednesday when the opening hours are 10.00 until 17.00.

General Information

About Edinburgh

Edinburgh, Scotland's capital city, is the perfect location for an international conference. It offers all the facilities international delegates expect... a magnificent city-centre setting, with its ancient castle dominating Princes Street - the main shopping thoroughfare and a plethora of architectural delights. The buildings of the 18th century "New Town" and the Palace of Holyrood House contrasting with the 16th and 17th century tenement buildings of the High Street and Old Town.

The relaxed pace of life in Edinburgh and the city's wonderful variety of cosmopolitan bars, cafes and restaurants will provide the perfect ambience for the Conference.

What to do in Edinburgh

Edinburgh is a city where there are many things to see and do and visitors to Edinburgh will never be bored. The problem is not what to see but managing to fit it all in.

Festivals

During the month of August Edinburgh hosts several festivals and over a million visitors come to Edinburgh to see an assortment of dance, drama and music. The Edinburgh International Festival (15th August to the 4th September) is over 50 years old and has earned its reputation as one of the world's greatest celebrations of the arts. The Edinburgh Festival Fringe (8th - 30th August) which grew up alongside the International Festival is now the largest arts festival in the world with over 1500 shows this year. There is also the Book Festival (14th - 30th August), the world's largest celebration of the written word and the Film Festival (15th - 29th August) now in its 52nd year and the world's oldest continually running film festival.

Probably one of the best known is the Edinburgh Tattoo (6th - 28th August) held on the Castle Esplanade presenting a mixture of military bands and music from all over the world. A highlight not to be missed is the Fireworks Concert on the 4th September where the Castle is the set for a magnificent fireworks display to music by the Scottish Chamber Orchestra.

Museums and Galleries

There are over 60 art galleries and museums in Edinburgh, ranging from well known ones such as the National Museum of Scotland to smaller ones like the Museum of Childhood. All are equally as fascinating. Two well-known art galleries, the Scottish Gallery of Modern Art and the National Portrait Gallery are situated on the mound, relatively near to the EICC.

Shopping, Eating and Drinking

There are a vast number of shops, restaurants and pubs in Edinburgh. Princess Street is home to many of the high street stores including the oldest independent department store, Jenners, which is a must for shopping with its many floors selling a variety of goods including great souvenirs of Edinburgh.

High Level Indexing of User-Defined Types

Chen W., Chow J-H., Fuh Y-C., Grandbois J., Jou M., Mattos N., Tran B. & Wang Y.

Implementation of SQL3 Structured Types with Inheritance and Value Substitutability

Fuh Y-C., Dessloch S., Chen W., Mattos N., Tran B., Lindsay B., DeMichel L., Rielau S. & Mannhaupt D.

Paper Session 16: High-performance Application Support

Thursday 9th September, 16:30-18:00, Fintry Auditorium

Generating Call-Level Interfaces for Advanced Database Application Programming

Nink U., Haerder T. & Ritter N.
PM3: An Orthogonal Persistent Systems Programming Language - Design, Implementation, Performance

Hosking A. & Chen J.

Cost Models DO Matter: Providing Cost Information for Diverse Data Sources in a Federated System

Roth M.T., Ozcan F. & Haas L.

Paper Session 17: Databases and the Web

Friday 10th September, 09:00-10:30, Fintry Auditorium

Data-Driven, One-To-One Web Site Generation for Data-Intensive Applications

Ceri S., Fraternali P. & Paraboschi S.

Optimization of Run-time Management of Data Intensive Web-sites

Florescu D., Levy A., Suciu D. & Yagoub K.

Extracting large-scale Knowledge Bases from the Web

Kumar R., Raghavan P., Rajagopalan S. & Tomkins A.

Paper Session 18: Aggregation Algorithms

Friday 10th September, 09:00-10:30, Pentland Auditorium

Aggregation Algorithms for Very Large Compressed Data Warehouses

Li J., Rotem D. & Srivastava J.

Extending Practical Pre-Aggregation in On-Line Analytical Processing

Pedersen B.T., Jensen C. S. & Dyreson C. E.

Hierarchical Prefix Cubes for Range-Sum Queries

Chan C-Y. & Ioannidis Y.

Paper Session 19: Query Systems

Friday 10th September, 09:00-10:30, Sidlaw Auditorium

Implementation of Two Semantic Query Optimization Techniques in DB2 Universal Database

Cheng Q., Gryz J., Koo F., Leung C., Liu L., Qian X. & Schiefer B.

High-Performance Extensible Indexing

Kornacker M.

Online Dynamic Reordering for Interactive Data Processing

Raman V., Raman B. & Hellerstein J.M

Industrial Sessions

Industrial Session 1: Tuesday 7th September 16:30-18:00, Pentland *Data Management in a Networked World Chair: Surajit Chaudhuri*

What are the current and future requirements and challenges for networked data management? How are these challenges currently addressed? How should data management concepts, tools, and techniques change to meet these requirements? In this industrial session, the following industry leaders with major commitments to networked data management will present their views:

Rafiul Ahad, Oracle
James Hamilton, Microsoft
Dr. Chris Pound, British Telecommunications plc.

Industrial Session 2: Wednesday 8th September 09:00-10:30, Pentland *Some Innovations in Microsoft SQL Server Chair: Jim Gray*

Microsoft SQLServer 7.0 has added a number of features to improve its performance in the Enterprise. This session looks at these innovations and includes the following talks:

Adam Blum: *Microsoft English Query 7.5: Automatic Extraction of Semantics from Relational Databases and OLAP Cubes*
Goetz Graefe: *The Value of Hash-Based Query Processing*
David Campbell: *Zebras, Cheetahs and Locking: The new locking, logging, and recovery architecture of Microsoft SQL Server 7.0*

Industrial Session 3: Thursday 9th September 14:30-16:00, Pentland *Industrial Session On Data Warehouses Chair: Umeshwar Dayal*

Data warehouses have grown to be one of the largest sectors of data management and continues to grow with new applications and usage scenarios. Many organizations are deriving major operational benefits and short term payback. As a result, data warehouses are taking on an importance as a major infrastructure component serving more than data collection, integration, and dissemination. Data warehouses clearly fill a gap in the current data management architecture of traditional DBMSs.

Leading data warehouse vendors will debate what are the current and future requirements and challenges for data warehouses

EICC

The Edinburgh International Conference Centre, 150 Morrison Street, The Exchange, Edinburgh, EH3 8EE.

The Edinburgh International Conference Centre, situated in the heart of Edinburgh is Scotland's foremost conference venue. The design of the EICC is unique within the UK and provides an extremely flexible and sophisticated venue for conferences and exhibitions. All the facilities are of the highest quality; from advanced presentation technology and flexible space configuration to first class catering. The crowning glory of the building is a magnificent circular 1200 seat auditorium that can be subdivided literally at the touch of a button into three separate self-contained auditoria accommodating 600, 300 and 300 people.

Directions to the EICC from Edinburgh's railway stations:

There are two stations in Edinburgh: Waverley and Haymarket Station.

Where possible, delegates should alight at Haymarket.

From Haymarket Please follow directional signage to the EICC.

From Waverley To walk from Waverley to the EICC, delegates should leave the Station by the Princes Street exit. Turn left on to Princes Street and walk along to the Caledonian Hotel, about half a mile. From there follow directional signage to the EICC.

Alternatively there are plenty of taxis available at the station. The journey time is approximately 10 minutes, costing approximately £3.00.

Directions to the EICC from Edinburgh Airport:

Edinburgh Airport is only 8 miles west of the city centre with excellent coach and taxi services and ample car parking facilities. The taxi journey to the EICC takes approximately 25 minutes, as does the coach journey to the city. Delegates travelling by coach are advised to alight at Haymarket Railway Station. From there they should follow directional signage to the EICC.

Messages and Mail

Participants and Conference Organisers may be reached during the Conference **only** at the EICC on the following numbers:

Tel: +44(0) 131 519 4131

Fax: +44(0) 131 519 4132

Email: vldb99@dcs.napier.ac.uk

Please note, these are only available during the conference.

All faxes must clearly display the name of the VLDB'99 Conference and the name of the recipient. All messages will be posted on the Conference notice board located next to the registration desks

How to get to Edinburgh



By Air:

Edinburgh International Airport, approximately 8 miles from the city centre and the EICC, is served by many major airlines. There are regular air services direct to Edinburgh from many UK and European destinations. Visitors from outside Europe should connect at one of these cities, the most popular being London, Amsterdam and Brussels from where connecting flights take approximately one hour.

Alternatively Glasgow International airport (50 miles from Edinburgh) has many direct flights to Europe and North America. There are regular coaches from Glasgow airport to Edinburgh.

By Rail:

Waverley Station, Edinburgh's main rail station, is at the east end of Princes Street, the city's main street. Rail travel from London's Kings Cross Station takes approximately 4 hours and there are comprehensive train connections from most other cities in the UK.

By Coach:

Long distance day or night coaches offer very fast and inexpensive services from London to Edinburgh. The journey takes approximately eight and a half hours. Coaches depart regularly from Victoria Coach Station in London.

By Road:

Edinburgh is easily accessible to the UK road network, whether travelling from the north or the south and is easily reached by road from Europe. Driving time from London, via the M1 and M6 motorways, is approximately 8 hours.

Tutorial Programme

Tutorial 1: From Semistructured Data to XML

Dan Suciu, (AT&T Labs, USA)

Tuesday 7th September 11:00-12:30 & 14:30-16:00, Pentland Auditorium

This tutorial describes two topics which, until recently, evolved in parallel: semistructured data and XML. XML is the recently adopted W3C standard intended to be the universal Web data exchange format. Semistructured data describes data that is irregular, schema-less, and self-describing, and has been studied by the database research community. There are some overlaps, but also some fundamental differences between the two approaches, due to the different cultures of the communities where they originated: the database and the document community. This tutorial compares and contrasts the two developments. It will cover in some detail: data models (OEM, XML, RDF), query languages (Lore, UnQL, StruQL, XML-QL, XSL), schema formalisms (including DTD's and RDF-Schema), and it will discuss some systems issues.

Dan Suciu is a member of the technical staff at AT&T Labs - Research. His current interests are semistructured data, query optimisation and processing, and the interaction between query languages and programming languages. Dan Suciu has been involved in several projects related to semistructured data: UnQL, Strudel, and XML-QL, and is currently writing a book with Serge Abiteboul and Peter Buneman, entitled "*Data on the Web: From Relations to Semistructured Data and XML*", to be published by Morgan Kaufmann.

Dan Suciu has served on several program committees and coedited two special journal issues related to semistructured data and the Web. He received his PhD from the University of Pennsylvania and his BS from the Polytechnic University of Bucharest, Romania.

Tutorial 2: Metasearch Engines: Solutions and Challenges

Clement Yu (University of Illinois at Chicago, USA)

Weiyi Meng (SUNY at Binghamton, USA)

Tuesday 7th 16:30-18:00 & Wednesday 8th 09:00-10:30, Sidlaw Auditorium

Many information search services or search engines have been installed in the Internet in recent years. Different search engines may employ different techniques to represent and rank documents, and they usually provide access to different sets of documents of diverse interest. Frequently, a user's information needs are stored in the databases of multiple local search engines. As the number of search engines increases it is inconvenient for an ordinary user to use them all and identify useful documents from the results returned. Consequently, there is an increasing need for automatic search brokers (metasearch engines) which can invoke multiple search engines. Through a search broker, only a single query is needed from a user to retrieve desired documents.

This tutorial will provide an overview of proposed methods for building an effective and efficient metasearch engine. The tutorial will specifically focus on different solutions to two problems. The first is *database selection*, the identification of search engines that are likely to return useful results to a given query. The second is *collection fusion*, the determination of which documents should be retrieved from each identified search engine and how to merge results from multiple search engines into a single ranked list. The tutorial will also point out some problems that need to be further researched.

Clement Yu is currently a professor in the Department of Electrical Engineering and Computer Science at the University of Illinois at Chicago, USA. He was the chairman of the ACM Special Interest Group on Information Retrieval (SIGIR) and has chaired several national and international conferences and workshops on databases and information/multimedia. His professional editorial activities include IEEE Transactions on Knowledge and Data Engineering, Distributed and Parallel Databases, and the International Journal of Software Engineering and Knowledge Engineering. He has served as an advisory committee member for the U.S. National Science Foundation. Weiyi Meng is currently an associate professor in the Department of Computer Science at the State University of New York at Binghamton, USA. His main research areas are Internet-based Information Retrieval and Multidatabase Query Processing. He has published many papers in leading journals and major conference proceedings (including TKDE, TODS, VLDB, and ICDE).

Tutorial 3: Using SQLJ for Enterprise Database Applications: Access, Procedures and Storage

Brian Becker & Ekkehard Rohwedder (Oracle Corporation, USA)

Wednesday 8th September 14:30-16:00 & 16:30-18:00, Pentland Auditorium

Thousands of businesses and organisations world-wide use SQL to effectively manipulate and manage quantities of data stored in very large databases. Developers programming data-intensive applications in general purpose languages such as C and COBOL have long had the ability to use SQL for this data manipulation. Until now, Java was unable to benefit from the strengths of SQL — the result being that Java has seen slower acceptance as a suitable language for mainstream business applications. The SQLJ effort is driven by major industry vendors such as Oracle, Sybase, Tandem, JavaSoft, IBM, Informix and others. The SQLJ specifications describe Embedded SQL in Java, Java Stored Procedures, Java UDFs and Java Data Types. This tutorial introduces SQLJ, explains how it works, and its relationship to JDBC, and highlights the benefits it can provide to those writing data-intensive applications.

Brian Becker and Ekkehard Rohwedder are the lead developers of Oracle Corporation's SQLJ translator. They have also designed and developed the SQLJ translator reference implementation, which is freely available and serves as the basis for many leading DBMS vendors' SQLJ offerings. As members of the SQLJ working group, they contribute to the ongoing multi-vendor effort to define the SQLJ language, now an ANSI standard. Brian is responsible for developing a standard runtime framework which allows binary portability and extensibility in SQLJ applications. He holds a Masters degree in Computer Science from Stanford University. Ekkehard is responsible for developing a standard SQL syntax and semantics checking framework for the SQLJ translator. He is pursuing a PhD in Computer Science from Carnegie Mellon University.

Tutorial 4: A Database Centric Update on CORBA

Sean Baker (IONA Technologies, Ireland)

Thursday 9th September 09:00-10:30 & 11:00-12:30, Pentland Auditorium

There are many boundaries that can seriously increase the cost of software development and of integrating existing systems: technical boundaries (such as multiple programming languages or operating systems) and social/organisational boundaries (between teams, departments or companies; and their web users). CORBA exists to help customers bridge these boundaries. It is rare for a complex CORBA system not to require some or all of its

Registration Details

Registration/Information Desk

The desk will be located in the Strathblane Hall of the EICC and will be open:

Monday 6th September from 17:00 - 19:00

Tuesday 7th - Thursday 9th September from 08:30 - 18:30

Friday 10th September from 08:30 - 14:00

Letter of Invitation

Please write to or email the VLDB'99 Secretariat if you require an official letter of invitation to VLDB99 to assist application for financial support. This invitation does not oblige the Organising Committee to pay travel, accommodation or any other expenses incurred by the delegate.

Related Conferences and Workshops

30th August - 3rd September 1999	Interact'99 http://www.dcs.gla.ac.uk/i99/
1st - 4th September 1999	Seventh International Workshop on Database Programming Languages (DBPL'99) http://www.dcs.gla.ac.uk/dbpl99/
2nd - 4th September 1999	International Conference on Cooperative Information Systems (CoopIS'99)
5th - 6th September 1999	International Symposium on Distributed Objects and Applications (DOA'99) http://www.cs.rmit.edu.au/conf/doa99/cfp.html
6th September 1999	User Interfaces to Data Intensive Systems (UIDIS'99) http://img.cs.man.ac.uk/UIDIS99/
6th September 1999	Workshop on Databases in Telecommunications http://eurep817.norrbottn.telia.com/workshop/
10th - 11th September 1999	Workshop on Spatio-Temporal Database Management (STDBM'99) http://timelab.co.umist.ac.uk/events/stdbm99/

Social Programme

VLDB'99 Reception - Tuesday 7th September 1999

There will be a welcome reception in the Strathblane Hall of the EICC. This will be an opportunity for delegates to meet in an informal atmosphere.

Scottish Evening - Wednesday 8th September 1999

This will be held in the Assembly Rooms in Edinburgh's famous Georgian New Town. Participants will be able to see one of the ballrooms in which the famous gathered to dance and converse at the time of Edinburgh's literary greatness in the late seventeenth/early eighteenth century. Delegates will experience a Scottish Evening in the elegant surroundings of the Assembly Rooms in George Street.

We will enjoy Scottish food, drink and entertainment. A chance to sample the delights of Scottish cuisine including the famous and unique haggis (which will be addressed in traditional style), Scottish beer and whisky, coupled with appropriate entertainment - ceilidh dancing, piping, clarsach playing (Celtic harps) and singing. Participation will be encouraged in the drinking, eating and dancing. For those who do not want to dance there are withdrawing rooms where people can sit and converse

Conference Banquet - Thursday 9th September 1999

The conference banquet will take place in the Great Hall of the Royal Museum of Scotland in Edinburgh's city centre. This is Scotland's premier museum housing an international collection of artefacts. Before the banquet delegates will be able to visit the adjacent recently opened Museum of Scotland. It is an exciting museum with a modern architecture and exhibits showing the development and history of the Scottish nation. The displays use many innovative and modern techniques. It is an experience not to be missed and will contrast with the Victorian architecture of the Great Hall where delegates will sit for the banquet.

servers to use a DBMS. A vast array of choices however, have to be taken into account as the complexity of the systems increases. For example, there are a bewildering number of approaches to storing CORBA objects in a DBMS.

This tutorial has two aims. The first is to give an update on the CORBA standard, as well as a commentary on parts that are of particular importance. New areas will be covered, such as Object By Value, Portable Object Adapter, Notification Service, and CORBA Components and its close relationship to Enterprise Java Beans (EJB). The second aim is to describe in detail how CORBA relates to databases, including the recently announced Persistent State Service (PSS). The tutorial will assume no prior knowledge of CORBA, but it will nevertheless cover many of the new standards that are only now appearing in products.

Sean Baker is a founder and director of IONA Technologies, the designers of the Orbix implementation of CORBA. His original experience in distributed computing was gained by working as a faculty staff member in the Distributed Systems Group, Department of Computer Science, Trinity College Dublin. There he worked on many projects, designing and implementing support environments for distributed object systems, and also their relationships to databases and persistence in general. In 1992 he co-founded IONA Technologies to exploit this experience. He is the author of "CORBA Distributed Objects" (Addison Wesley Longman and ACM Press) and co-author of "CORBA Fundamentals and Programming" (Wiley).

Tutorial 5: Design and Perception in Information Visualisation

Matthew Chalmers (University of Glasgow, Scotland)

Thursday 9th September 14:30-16:00 & 16:30-18:00, Sidlaw Auditorium

This tutorial provides an overview of the use of 2D and 3D graphics in interaction with complex information. Information visualisation is seen as one way to address the problem of handling the data generated by web, data mining and database tools. Techniques for visualising a spectrum of data structures - from 1D and 2D data to high-dimensional and heterogeneous data - will be described, demonstrated and critiqued. The aim is not simply to describe the key 2D and 3D visualisation techniques, including those just making their way out of research labs, but also to help you understand the perceptual and design issues involved in visualisation, and the characteristic strengths and weaknesses of this approach to interaction. A number of prototype and commercial systems will be discussed and demonstrated, with examples taken from visualising data in web and banking applications.

Matthew Chalmers gained his PhD on ray tracing and concurrent object systems at East Anglia. He spent four years at Xerox EuroPARC in Cambridge working on CSCW, graph layout algorithms and information visualisation. He started the visualisation group at Ubilab, Union Bank of Switzerland's research lab in Zurich, working there for over three years. After a research fellowship at U. Hokkaido, Japan, he recently joined the University of Glasgow. His current research focuses on social and perceptual issues in visualisation and collaborative filtering, and, more theoretically, relating linguistics and philosophy to information representation. He is on programme committees for the IEEE Visualisation Conference, the IEEE Information Visualisation Symposium, the ACM Information Retrieval Conference (SIGIR), and the European Conference on Computer Supported Collaborative Work (ECSCW), as well as the 1999 Workshop on User Interfaces to Data Intensive Systems.

Demonstrations

Demonstrations are a new addition to the VLDB portfolio whereby selected results from research labs will be demonstrated in a relatively informal environment.

The demonstrations are scheduled to run in the Harris room, which holds a maximum of 50 delegates thereby providing a suitable atmosphere for interaction between the presenter and audience. Due to the limit on numbers per session, the demonstrations will be repeated throughout Wednesday and Thursday to maximise the opportunity for delegates to attend them.

A schedule of the demonstrations will be prominently displayed outside the Harris room and entrance to the sessions will be on a first come first served basis.

The demonstration programme will comprise of the following demonstrations:

Curio: A Novel Solution for Efficient Storage and Indexing in Data Warehouses

Datta A., Ramamritham K. & Thomas H.

Muninn Technologie

Hyper-Programming in Java

Zirintsis E., Kirby G. & Morrison R.

University of St Andrews

Building light-weight wrappers for legacy Web data-sources using W4F

Sahuguet A. & Azavant F.

University of Pennsylvania & École Nationale Supérieure des
Télécommunications

XML Repository and Active Views Demonstration

Mignet L.

INRIA

Spatio-Temporal Retrieval with RasDaMan

Baumann P., Dehmel A., Furtado P., Ritsch R. & Widmann N.

FORWISS München

Miro Web: Integrating Multiple Data Sources through Semistructured Data Types

Bouganin L., Chan-Sine-Ying T., Dang-Ngoc T.-T., Darroux J.-L., Gardarin G.
& Sha F.

Université de Versailles

Aqua: A Fast Decision Support Systems Using Approximate Query Answers

Acharya S., Gibbons P. & Poosala V.

Bell Labs

The Mirror MMDBMS architecture

De Vries A., Van Doorn M., Blanken H. & Apers P.

University of Twente

Exhibition

Running alongside the main conference for its full duration will be a co-related exhibition. This will provide a forum for industrial vendors, such as our major sponsor Oracle, to display and demonstrate their latest hardware and software tools and services. The exhibition will also provide a forum for traditional and electronic publishing, presentation of new tools for electronic commerce, and exhibits of the products of long-term research projects.

The exhibition will run in the Lomond Suite (details available on the VLDB'99 or EICC web-sites) alongside the refreshment facilities. Thus delegates will regularly be presented with the opportunity to browse the exhibits between sessions, in addition to the opportunity to make dedicated appointments to view items of interest.

As well as providing an additional point of interest and focus for our VLDB delegates from far afield, the exhibition is also intended to provide an attraction for local industrial and commercial companies. To facilitate this local advertising will be used to encourage the attendance of full and daily delegates from those local companies, thereby adding to the delegate mix and providing further opportunities for delegates to establish useful contacts for commercial, research and/or social pursuits.

Full details of the exhibition can be found on the VLDB'99 website. If you wish further information, or would like to exhibit at VLDB'99, please contact the Exhibition Organiser, Lachlan MacKinnon, at lachlan@cee.hw.ac.uk.

VLDB'99 Web Sites

Latest details of the conference can be found at the VLDB'99 main web site:

<http://www.dcs.napier.ac.uk/~vldb99/>

Alternative mirror sites are also available at:

America <http://www.cs.brown.edu/vldb99/>

Australia <http://www.csee.uq.edu.au/wsc/vldb99/index.html>

UK <http://vldb99.scit.wlv.ac.uk/>

Payment

Payment for the first night's accommodation must accompany this application (a receipt will be forwarded).

One of the following methods of payment is acceptable:

- CREDIT CARD - We are pleased to accept Mastercard/Access, Visa or Switch.
- CHEQUE - Payment can be made using Eurocheque or a cheque drawn on any U.K. bank in £ Sterling. Cheques should be made payable to VLDB 99
- BANK TRANSFER - Payment to Clydesdale Bank, Sort Code Number 82-63-03, Account number 30883531 at Bankhead Avenue, Edinburgh EH11 4HD, Scotland. Please include your name and reference "VLDB 99". (There is a supplement of £20.00 payable for this method of payment to cover bank charges).

Payment Details

Registration: _____ Hotel deposit: _____ Tours: _____ Social events: _____

Total amount payable: _____

Please indicate how you wish to pay the balance of account: Credit Card/Cheque/Bank Transfer*

Payment by Credit Card

Please complete the following section.

Type of Card: **Visa/Master Card/Switch***

Name on Card: _____

Card Number: _____

Expiry Date: _____ Issue Number (switch only): _____

Address**: _____

** Please supply address if different from registration details.

VLDB Journal Special Offer:

Delegates at VLDB'99 can take advantage of a reduced subscription for the VLDB Journal by subscribing at the Springer booth during VLDB'99. Subscribe for the VLDB Journal starting 1999 or 2000 at an annual subscription fee (for 1999) for individuals of DM 79,— /US \$48.— including postage and handling or for institutions DM 298,— plus postage and handling (DM 11,80 in Germany, DM 16,80 others)/ US \$182.— plus postage and handling (\$ 26.—).

Please note that the \$ prices are applicable for customers in USA, Canada and Mexico; the DM prices for customers in other countries. Please tick this box if you want to take advantage of this special offer:

☐

Booking Form

Personal Details			
Title:		Forename:	
Surname:			
Institution:			
Address:			
Country:			
Post Code:			
Telephone:			
Fax:			
E-mail:			
Speaker:	Yes/No*		
Badge Details			
Name:			
Affiliation:			

Note: if left blank the default is the Forename, Surname and Institution details from above.

VLDB'99 Registration

Please tick the appropriate registration:

	Regular (before 31 st July)		Late (after 1 st August)	
Regular	£340.00		£370.00	
Student	£175.00		£295.00	

Vegetarian: Yes/No*

If you do not eat meat a vegetarian option will be provided at the banquet.

* Delete where applicable

All prices are in Pounds Sterling

Hotel Reservation

Hotel Name	Star Rating	Rate per Single room	Rate per Double room	Order of Preference
The Caledonian	5 star	£159.00	£225.00	
Stakis Grosvenor	4 star	£99.00	£139.00	
Carlton Highland	4 star	£115.00	£115.00	
Frederick House	3 star	£60.00	£75.00	
Apex International	3 star	£79.00	£90.00	
The Point	3 star	£78.00	£105.00	
Tailors Hall	3 star	£59.00	£75.00	
Jury's Inn	3 star	£69.00	£75.00	
Parliament House	3 star	£60.00	£85.00	
Simpsons Hotel	2 star	£60.00	£72.00	
Thistle Court	2 star	£59.00	£70.00	
Pollock Halls	Budget	£26.50	N/A	
Napier University Self-Catering	Budget	3 night package based on 3 persons sharing a flat - £67.50 per person. Extra nights subject to availability - £17.50		

I wish to reserve a Single/Double* room.

Name of occupant(s) _____

Date of arrival _____ Date of departure _____ Number of nights ____

Conference Tours

Date	Tour	Cost	Number Required
6th September	The Borders	£39.00	
7th September	Glenkinchie Whisky Distillery (Half day)	£15.00	
8th September	St Andrews & The Kingdom of Fife	£38.00	
9th September	Perthshire	£40.00	
10th-12th September	Post Conference Tour (sharing twin/double)	£210.00	
	Post Conference Tour (single)	£245.00	

Social Events

Please enter number required:			
Additional Banquet tickets (£55)		Scottish Evening (£29)	

Bound copies of the tutorial notes will be available for purchase at the conference, please tick box if you would like a copy ☐

Registration Conditions:

- Regular registration includes: attendance at all sessions, copy of the proceedings, tea/coffee and entrance to Reception and Banquet.
- Student registration includes: attendance at all sessions, copy of the proceedings, tea/coffee and entrance to the Reception. **(Students must produce a letter from a recognised educational institution confirming that they are a full-time student on arrival)**
- Neither registration includes lunch, tutorials notes or entrance to the Scottish Evening.
- Please submit one registration form for each delegate.
- Fees will be refunded if a written request is received at least 30 days prior to the event. Such cancellations will attract a £30 administration charge. No refund will be made for cancellations received less than 30 days prior to the event. Substitutions may be made at any time.

Hotel Booking Conditions

- Rooms will be allocated on a 'first come, first served' basis. In the event of three choices being unavailable, we will allocate an alternative room based on the budget of the preferred hotel/proximity to the conference venue.
- Reservations will only be accepted using the official accommodation booking form. Any cancellations or amendments must be made through Clansman Monarch by fax or Email and NOT with the hotel. Amendments may incur a discretionary charge of £10.00.
- The booking form must be accompanied by payment for the first night's stay. A receipt will be forwarded upon payment of the outstanding balance.
- In the event of non-arrival, the client or agent whose signature is appended to the booking form, accepts all legitimate charges raised at the discretion of the hotel.
- Cancellation Charges: Up to 4 weeks prior to arrival - administration charge of £20.00 per booking. Less than 4 weeks prior to arrival - first night's accommodation.
- Any additional charges incurred at the hotel will be settled direct with the property before departure.