**Database Research**

- Exciting time to be doing database research
  - Incredible amounts of data generated every day
    - In traditional contexts as well as new emerging environments
      - e.g. sensor networks, cameras, scientific data
  - Storing, processing, and disseminating this data perhaps the most important challenge

- [UMD Database Group](#)
  - Multi-faceted and diverse research agenda
  - Extensive collaborations with: vision, machine learning, theory, computational biology, CLIP
Ongoing Research @ UMD

- Data management in new, emerging environments
  - Life sciences data; Biological data
  - Sensor networks
  - Mobile databases; distributed, P2P, or web data sources
  - Social networks
  - Uncertain, probabilistic databases

- Traditional database topics
  - Managing and querying data warehouses
  - Spatial databases
  - Query optimization; adaptive query processing
  - Data mining
Faculty

- **Hanan Samet**
  - Hierarchical spatial data structures, and applications to GIS, graphics, image databases, visualizations
  - Efficient searching and indexing in spatial networks
  - Search in spatio-textual databases

- **Nick Roussopoulos**
  - Data analytics; Data warehousing/OLAP
  - Distributed data acquisition; Mobile, P2P databases
  - Business process modeling; Service-oriented architectures

- **V. S. Subrahmanian**
  - Probabilistic, nonmonotonic reasoning; software agents
  - Information extraction and opinion analysis over multi-lingual unstructured text collections
Faculty

- Louiqa Raschid
  - Life sciences data management; Bio-informatics
  - Health information systems; Disaster data management
  - Wide-area data sources; Data Integration

- Lise Getoor
  - Probabilistic reasoning over structured, relational data
  - Social networks: analysis, data management
  - Link mining; Link-based classification

- Amol Deshpande
  - Probabilistic databases; Statistical modeling of data
  - Sensor network algorithms
  - Query optimization; Adaptive query processing
Courses: Fall 2008

- **CMSC 828T: Applications of GPU and Cloud Computing to Nontraditional Databases, Computer Graphics, Data Mining, and GIS**
  - Prof. Hanan Samet
  - Focus:
    - Emerging computing paradigms (e.g. MapReduce)
    - How to retool prevalent data structures/algorithms
    - Focus on databases, graphics, data mining, GIS applications

- **CMSC 498L: Introduction to “Cloud Computing”**
  - Prof. Jimmy Lin (iSchool)
  - Focus on Web Applications, MapReduce framework, Ajax
  - Not a CS Graduate course

- **CMSC 424: Undergraduate Databases**
  - Prof. Amol Deshpande
Courses: Fall 2008

- **CMSC724: Database Management Systems**
  - The graduate database course
  - Prof. Amol Deshpande

- **CMSC 424: Undergraduate Databases**
  - Prof. Nick Roussopoulos
Aside: ACM Programming Contest, 2009

- World-wide programming competition
  - Great fun; opportunity to travel, get exposure etc...
  - Fairly low time commitment

- Regional Contest
  - October 25, 2008; typically at JHU, Baltimore

- World Finals
  - Stockholm, Sweden: April 18-22, 2009

- Requirements:
  - Good programming and algorithms skills
  - Born in 1985 or after (for most graduate students.. but talk to me)

- Send me email if interested (amol@cs.umd.edu)