

# COMPUTER SYSTEMS

## “The Plumber’s Paradise”



# Importance

- Although India boasts of a highly visible software industry, it is almost entirely focused on services. A vibrant ecosystem of computer systems research in academia is vital for our software industry to extend its horizons to indigenously developing world-class products.
- IISc is in the vanguard - come join us in this effort!

# Research Coverage

R C Hansdah Vinod Sharma  
Anurag Kumar Utpal Mukherji

**Computer Networks**

Vijay Natarajan

**Graphics & Visualization**

Jayant Haritsa  
R C Hansdah

**Database Systems**

Y N Srikant R Govindarajan  
Uday Reddy K Raghavan  
Aditya Kanade Deepak D'Souza

**Programming Languages,  
Compilers, Software Engg**

K Gopinath R C Hansdah  
Vinod Ganapathy

**Operating Systems**

Matthew Jacob R Govindarajan  
Arkaprava Basu

**Computer Architecture**

IISc

# Translational Research

- Variety of free software tools in use by the academic and industrial communities
  - ChExVis, Recon, MathFinder, Omen+, Codd, Picasso, DroidRacer, DeepFix, ActiveThief, ...
- Startup companies
  - Picopeta Simputer, Mimyky, PolyMage Labs
- Close association with leading multinationals
  - HP, Intel, AMD, Microsoft, Google, IBM, Huawei, nVidia, ...

# Recognition

- Early Indian papers in the premier Systems conferences
  - ICDE 1994, Sigmod 1996, ISCA 1997, ...
- Steady stream in recent times
  - ISCA 2018/20, MICRO 2018, ASPLOS 2018/9, CGO 2015/7, ISSTA 2017, PLDI 2017/8, POPL 2016, VLDB 2018, ...
- Award papers
  - Top-10 video abstracts at PLDI 2015
  - Best paper at CGO 2015, Best student paper at ICDE 2016
  - Best software demo at VLDB 2010/ 2014
- ACM India Dissertation Award (Honorable Mention), 2017
  - Multi-Core Memory System Design: Developing and Using Analytical Models for Performance Evaluation and Enhancements

# The Turning Tide

- A few years ago, Intel India invested \$120 million to expand its Bangalore R&D centre; Core competencies of the Indian operations include CPU design, SOC, software and graphics.
- Database engine components for Sybase ASE and HP SQL/MX have been built in Pune and Bangalore.