

# COPLINK Overview

Hsinchun Chen, Ph.D.  
Director,  
COPLINK NSF Center of Excellence  
Artificial Intelligence Lab  
University of Arizona  
Founder, Knowledge Computing  
Corporation

**Acknowledgement:  
NIJ, NSF, COPS, TPD,  
PPD**

**COPLINK**<sup>™</sup> Connect.  
Search.  
Solve.

# COPLINK Progression



1990 Artificial Intelligence Lab (AI Lab) founded at UA

1991-present NSF CISE funding (IIS, Digital Library Initiative, NSDL, ITR), NIH, DARPA

1997 NIJ COPLINK funding; Web-enabled data warehousing

2000 NIJ AGILE interoperability funding; information sharing

2001 NSF Digital Government funding; text mining, agents, and knowledge management; COPLINK Center for Excellence

Goal: A model and testbed for law enforcement and national security research

- Artificial Intelligence Lab (AI Lab): continued research, 1990-present
- 1997-1999, NIJ: AI Lab COPLINK research prototype
  - ➔ Real user need, lack industry-strength software, lack operational software engineering and project management ability, high student turn-over
- June 2000: Knowledge Computing Corporation (KCC) founded (UA spin-off), \$2.6M venture capital funding, software engineering and project management recruiting, product development, 15 FTEs, significant UA and TPD personnel, based in Tucson

# COPLINK Research & Development (cont'd)



- 2000-March 2002, NIJ: KCC COPLINK Connect and Detect 1.0, 2.0, and 2.5; TPD and PPD, AI Lab (10%)
- 2000-2003, NSF DG: AI Lab COPLINK Knowledge Management research
  - ➔ COPLINK Visualizer and COPLINK Agent are promising for the community
- 2001-present, 30+ significant COPLINK interests, KCC: law enforcement and national security; Texas, Michigan, Minnesota, Iowa, Maryland, California, etc.

- Identify critical research topics and issues
- Develop research prototypes
- Perform lab-based experiments and user studies
- Research conducted by faculty, scientists and students
- **Output: research prototypes, white papers, journal/conference papers**

- Identify operational and sustainability issues
- Develop operational and sustainable systems
- Provide testing, documentation, project support, training, maintenance/administration, upgrades
- Development conducted by full-time, permanent software engineers and project managers
- **Output: operational systems, online help, user manuals, training module, administration module**

# COPLINK Key Publications



- COPLINK Connect prototype user study, ICIS Conference, 1999
- COPLINK Connect V1.0 user study white paper, 2000; COPLINK Detect V1.0 user study white paper, 2001
- COPLINK case study, spider, visualization research, narrative analysis, field study, DG.O Conference, 2001 and 2002
- COPLINK Connect system and case study, DSS DG special issue, 2002
- COPLINK Detect system and case study, IEEE Computer, 2002
- COPLINK KM review, CACM DG special issue, 2002 (forthcoming)

# Recent KCC Developments



- COPLINK Connect/Detect 2.0/2.5
  - ➔ Efficient data migration, scalable architecture and interface, sustainable operations
- New pricing model: no software cost, engineering and maintenance only
- From law enforcement interest to national security and e-government applications
  
- System deployed: TPD, UAPD, PPD
- System under development: Huntsville/TX
- Approval/Commitment: Ann Arbor/MI, Glendale/AZ, Des Moines/Iowa, Henderson County/NC
- Proposal: **United States Secret Service, Maryland State Police**, Huntsville e-Government, Iowa state
- Interests: Minnesota, San Diego/CA, Boston PD, Chicago PD, Arlington, etc.



# Recent AI Lab Research Findings

- COPLINK Agent: agent and wireless architecture  
→ Enhance police information timeliness, collaboration, mobility, and safety
- COPLINK Visualizer: Tree Visualizer, Network Visualizer, and GeoMapping  
→ Powerful crime analysis and investigation tool
- TPD Organizational Study: large-scale technology adoption study 400+ subjects (April-June 2002)
- Crime data and text mining: deep analysis and prediction model for specific crime type → Deception Detection, Link Analysis, Narrative Analysis, Predictive Mining

**COLINK: A Model and Testbed for  
Law Enforcement and National  
Security Research**

For project information:  
<http://www.CoplinkConnect.com>  
<http://ai.bpa.arizona.edu>

**COP****LINK**<sup>™</sup> Connect.  
Search.  
Solve.