Welcome to Stockholm University (SU) and the Department of Computer and Systems Sciences (DSV)

Uno GH Fors, DDS, PhD
Professor
Vice head of DSV
Stockholm University

- The largest University in Sweden
- 1878 Founded as university college
- 1960 Became University
- 1970 New campus at Frescati
Stockholm University

- Four faculties (Natural sciences, Humanities, Social sciences, Law)
- 69 Departments
- 65,000 students
- 2,000 PhD students
- 5,000 Faculty
- Turnover: SEK 4.2 billion (~450 million Euro)
  - Undergraduate education: 41%
  - Research and doctoral program: 59%
Dept. of Computer and System Sciences - DSV

- Established in 1965-1966
- The largest dept. at SU
- A part of the Faculty of Social Sciences
- Focus on research, graduate and undergraduate education
- Cooperation with society at large
Dept. of Computer and System Sciences - DSV

- Located in Kista Science City – one of the largest IT clusters in the world
- 16 different research fields
- 4 units
- 5 centers
DSV focus on bridging the gap between, on one hand information technology, on the other hand the social and the behavioral sciences and the humanities.
Our focus in the field is on design, construction and use of IT systems in their context – and on their relation to people, organizations and society.
DSV in approximate figures 2012

- Turnover: 204 MSEK
- Number of employees: 282
- Number of professors: 12 + 7
- Number of senior lecturers: 32
- Total number of students per year: 5,700; 43% women
- Number of freshmen in undergraduate programs: 653
- Number of freshmen in master’s programs: 205
- Number of doctoral students: 91; 24 women
Research areas

- Business Process Management and Enterprise Modeling
- Consumer-oriented mobile services
- Cyber systems security
- Data and text mining
- Digital games
- E-government and E-democracy
- Health Informatics
- ICT for Development
- Immersive participation
- Interaction design
- IT Management
- Language Technology
- Risk and decision analysis
- Services Science
- Technology Enhanced Learning
Profile areas

- Special fields in focus - special expertise
- Artistic technologies (RATS)
- E-government (e-gov)
- ICT for development (ICT4D)
- Technology Enhanced learning (TEL)
Unit of Systems Analysis and Security (SAS)

Key activities
- decision and risk analysis
- data mining
- simulation of complex systems.
- security, privacy and trust in systems
- cyber security and forensics

4 units at DSV
Unit of Interaction Design and Learning (IDEAL)

- Flexible learning
- Virtual cases for learning/assessment
- Simulation for learning
- ICT4D
- Interaction design
- Cooperation and projects:
  - Sci-Pro: Supports and control the thesis process
  - Video/HyperCaster: Video storage and non-linear video in education
  - Virtual cases: Virtual patients, Virtual cases for assessment, Virtual cases in law
  - Simulation: Virtual scenarios for Rehabilitation of violent offenders and in Forensic psychiatry
4 units at DSV

Unit of ACT in Communication with Technology

- Internet of Things
  - Sensors and more
- Games and gaming
  - Mobile games
  - Social games
  - Game Development
- Computer Science & Software Engineering
4 units at DSV

Unit for Information Systems (IS)

- Information systems design and use
- Business process management
- Enterprise modelling
- IT management
- Service science and innovation
Undergraduate education
– B.Sc. programmes

• Computer and Systems Sciences
• Computer Science (and Software Engineering)
• Computer Game Development – Construction
• Computer Game Development – Design
• Digital Media
• Business Administration and Information Technology
• Enterprise Systems and Service Design
• Interaction Design
• Market Communication and Information Technology
Graduate education
– M.Sc. programmes

- Computer and Systems Sciences
- Information Systems Management
- Strategic IT Management
- IT project Management (Online)
- Health Informatics (joint degree with Karolinska Institutet)
- Information and Communication Technology for Development - ICT4D (Online)
- One year Master's program in Computer and Systems Sciences
- Master in game development (planned)
Post-Graduate education
– Ph.D programmes

• Computer and Systems Sciences
• Information society

• We welcome “Industry PhDs” from other universities, organizations or companies
Centers and research constellations

Spider – Swedish Program for ICT in Developing Regions

- Funded by SIDA
- 2003–2013
- Promotion and diffusion of Information and Communication Technology by building human capacity and enhancing knowledge for societal sustainability and progress in developing regions
Centers and research constellations

Mobile Life Centre

- Funded by Vinnova (Vinnex)
- 2007–2017
- The Centre includes research on consumer-oriented mobile and ubiquitous services
- Partners: Ericsson AB, Nokia Corporation, Microsoft Research, TeliaSonera, City of Stockholm, Kista Science City, STING, Company P, Bambuser
Centers and research constellations

RATS – Research in Artistic Technologies

- Adding value for Expression, Participation and Communication in cultural and societal events
- In our RATS program we develop and study technologies that add value and deeper meaning to cultural, societal and entertainment events
- Includes activities like DAC, RATS Theatre, CATS and more
- CATS: Collaboration with Royal Institute of Arts and Royal College of Music
Centers and research constellations

eGovlab

- Started in 2011
- A center for excellence in e-Governance.
- To research and develop technologies as well as methodologies and their implications for inclusive governance
Centers and research constellations

Service Science and Innovation (SSI)

- Established in 2010
- Research on the design of public services and service systems for more efficient public service, consequently contributing to enhanced democracy
- Partners are i.a. IBM, SU Innovation and STING (Stockholm Innovation and Growth)
So - What is DSV doing within the field of technology enhanced learning (TEL)?
TEL @ DSV

• We see TEL as
  – Any type of ICT-based learning and/or assessment method
  – In any domain
  – On any level (preschool to PhD to LLL)
  – Campus, Blended or Online

• Research methods include
  – Educational science (Pedagogy & Didactics)
  – Psychology
  – ICT
  – Interaction design
  – Neuroscience
  – And many different domain specific methods from medicine, mathematics, education, IT, archaeology etc.
TEL @ DSV

• Projects include
  – Mobile devices in formal and informal education
  – Simulation and virtual cases for learning
  – TEL for developing regions
  – TEL and interaction design
  – Innovative assessment models
  – TEL in computer science education
  – TEL and equality
  – Virtual learning environments
  – Theories and models for TEL
  – 3D environments for learning
  – Flexible learning
TEL @ DSV

- Project example – 1 – Virtual cases for learning
  - Training students or staff in healthcare, teachers, lawyers, social service, interpreters etc. to make critical decisions
  - Virtual patients, students, legal clients, customers etc.
  - Encounters with persons under stress, in pain, angry, mentally ill, worried, upset etc.
  - But still be able to make good decisions
• Project example – 2 – Virtual cases for assessment
  – Assessing abilities, skills etc. for critical reasoning and decision making
  – Using Virtual Cases to semi-automatically score and grade exams
Project example – 3 – DEKAL

- Studies of collaboration and learning supported by external representations and other tools
- Focus on the processes involved in the creation of design representations, in particular the role that representational tools and action play in that process

Results

- Lack of concepts
  - Aspects of interactivity and dynamics
- Gestures and other actions complement and make sketches come alive (multimodal representations)
- Gestures and other actions thematize and illustrate concepts of interaction and dynamics
TEL @ DSV

- Project example – 4 – PLACES
  - Focus on Mathematics and Language learning in schools
  - Studies how mobile technology can fit in with the curriculum, and with current teaching practices in schools
  - Analyzing how mobile technology is changing and transforming learning activities
  
  - Children aged ten to twelve years, and teachers in language learning and mathematics
  - Data collection through Interviews, surveys and workshops with teachers
  - The project uses practice-based research methods and active participation from teachers and students
TEL @ DSV

- Project example – 5 – we.learn.it
TEL @ DSV

• Our TEL activities focus on
  – R \textit{and} D
  – Scientifically based projects
  – International collaboration
  – External research projects (incl. EU)
  – Publications in international scientific journals and leading conferences

• See more at:
  – http://dsv.su.se/en/research/research-areas
How to find DSV tomorrow?

- DSV is located in the Forum building, Campus Kista. Visiting address: Isafjordsgatan 39
- Blue metro line (11) from T-centralen (direction Akalla) to Kista (20 minutes)
- Walk out through the north ticket hall (in train direction) and turn right after the escalator
- Pass straight forward through Kista Galleria. On the other side of the Galleria, the Forum building is first on your left hand after the footbridge
How to find DSV tomorrow?

- 5-7 minutes by foot
- Then follow signs to Sal A