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DEPARTMENT OF  
**KNOWLEDGE  
TECHNOLOGIES**

Jožef Stefan Institute

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TECHNOLOGIES**

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KNOWLEDGE  
MANAGEMENT

DATA MINING  
MACHINE  
LEARNING

SEMANTIC  
WEB

TEXT  
WEB  
MULTIMEDIA  
MINING

DECISION  
SUPPORT

HUMAN  
LANGUAGE  
TECHNOLOGIES

DEVICES

LEARNED  
MEDIA

TECH  
VIDEO  
AUDIO

SERVICES  
LEARNED

LEARNED  
MEDIA

SERVICES  
LEARNED

LANGUAGE

JA

ETY

INCLUSI

RF

ESAFETY

ON  
LANGUAGE

IGITISE IC

## DEPARTMENT OF KNOWLEDGE TECHNOLOGIES

Our goal is to advance cutting-edge research and applications of knowledge technologies, including data mining, machine learning, decision support, human language technologies, knowledge management and other information technologies that support the acquisition, management, modeling and use of knowledge and data.

We have authored and edited numerous scientific books and successfully coordinated European projects and networks. In the 6th Framework programme we became partners of 16 European research projects.

Our technologies have been successfully applied to many practical problems, including selection of applicants for loans of the National Housing Fund, analysis of UK traffic accidents, medical diagnosis, analysis of the Slovenian public healthcare system, improving the functionality of Microsoft Internet Explorer and analysis and visualization of European IST research projects.

The department consists of 24 researchers, 10 students and technical support staff.

## EU 6TH FRAMEWORK PROJECTS

**NeOn** - Lifecycle Support for Networked Ontologies  
**ECOLEAD** - European Collaborative Networked Organizations Leadership Initiative  
**TAO** - Transitioning Applications to Ontologies  
**SWING** - Semantic Web Services Interoperability for Geospatial Decision Making  
**Tool-East** - Open Source Enterprise Resource Planning and Order Management System for Eastern European Tool and Die Making Workshops  
**E4** - Extended Enterprise management in Enlarged Europe  
**SIGMEA** - Sustainable Introduction of Genetically Modified crops into European Agriculture  
**SEKT** - Semantically-Enabled Knowledge Technologies  
**IST-World** - Knowledge base for RTD Competencies in Information Society Technologies  
**PASCAL** - Pattern Analysis, Statistical Modeling and Computational Learning  
**IQ** - Inductive Queries for Mining Patterns and Models  
**KD-ubiq** - A blue print for ubiquitous knowledge discovery systems  
**IMAGINATION** - Image-based Navigation in Multimedia Archives  
**ALVIS** - Superpeer Semantic Search Engine  
**SMART** - Statistical Multilingual Analysis for Retrieval and Translation  
**CEC-WYS** - Central European Centre for Women and Youth in Science

## SOFTWARE AND SERVICES

**SD, CN2-SD, APRIORI-SD** - Subgroup discovery algorithms, part of the Orange data mining suite [Python, open-source]  
**RSD** - Relational Subgroup Discovery through first-order feature construction [Yap Prolog, open-source]  
**Text Garden** - Text Mining suite of software tools [C++, open source]  
**DEXi** - Multi-attribute modeling for Decision Support [Delphi, freeware]  
**CIPER** - Constrained Induction of Polynomial Equations for Regression [C++, freeware]  
**MLC4.5, MLJ4.8** - Learning to combine classifiers with meta decision trees [C and Java, open source]  
**Lagrange/Lagrange** - Learning algebraic and ordinary differential equations [C, open source]

Analysis and visualization of EU RESEARCH projects (IST-World) [on-line service]  
Multi-lingual lemmatizers, concordances, dictionaries [on-line service]

## SOLOMON SEMINAR LECTURE VIDEOS

<http://solomon.ijs.si>

## MAIN RESEARCH AREAS

DECISION SUPPORT  
KNOWLEDGE MANAGEMENT  
DATA MINING AND MACHINE LEARNING  
SEMANTIC WEB  
TEXT, WEB AND MULTIMEDIA MINING  
HUMAN LANGUAGE TECHNOLOGIES

## MAIN APPLICATION AREAS

ECOLOGY  
MEDICINE  
HEALTHCARE  
ECONOMY  
MARKETING  
AGRICULTURE

The Department collaborates with the Institute's  
CENTER FOR KNOWLEDGE TRANSFER  
IN INFORMATION TECHNOLOGIES  
<http://ct3.ijs.si>

Department members also teach at the  
JOŽEF STEFAN INTERNATIONAL  
POSTGRADUATE SCHOOL  
<http://mps.si>