

Current Research Topics@Lasaris

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Overview
Research
Projects
Conferences, workshops, competitions
Teaching
Academic Partners
Foreign Partners
Industrial Partners
Strategy

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Lab Software Architectures and Information Systems

History the youngest lab @FI (established spring 2009)

Location Šumavská Center (Šumavská 15, Brno, CZ)

Staff Bára Bůhnová (deputy leader), Radek Ošlejšek,
Tomáš Pitner (leader)

PhDs Pavel Drášil (completed), Tomáš Gregar (to finish),
Jirka Kolář, Michal Kolínek, Honza Konečný,
Tomáš Ludík, Jaroslav Škrabálek, Matej Bosák
(prospective PhD student)

Collaborators Jiří Hřebíček (F. of Science), Jan Pavlovič (TTO),
Lukáš Rychnovský (ICS), Martin Osovský (ICS)

Goals Teaching, Primary and applied research in
software architectures, technologies, methodology.

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Lasaris Research Areas

Information Systems former leader Jaroslav Ráček, now an open position – apply for the job!

Software Architectures and Technologies leader Barbora Bührenová

Complex Event Processing leader Tomáš Pitner

Software Development and Management leader Radek Ošlejšek

Technology-enhanced Learning leader Tomáš Pitner

Modern Mobile Platforms leader Jaroslav Škrabálek

Information Systems

- 1 Enterprise information systems
- 2 Information technology in public administration
- 3 Crisis management
- 4 **PhDs:** Tomáš Ludík *Visualization and Processes in Crisis Management*

Software Architectures and Technologies

- 1 Software architectures (Barbora Bühnová)
- 2 Enterprise systems technologies (Jan Pavlovič)
- 3 Web-based systems (Tomáš Pitner)
- 4 **PhDs:** Jan Konečný *Software reliability*

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Complex Event Processing

- 1 CEP for Service Systems (Tomáš Pitner)
- 2 **PhDs:** Jan Konečný, Matej Bosák (prospective, 2012)

Software Development and Management

- 1 Software engineering and management (Radek Ošlejšek)
- 2 Business process management and workflow systems (Jan Pavlovič)
- 3 **PhDs:** Michal Kolínek, Jiří Kolář

Technology-enhanced Learning

- 1 Person-centred approach and technology-enhanced learning (Tomáš Pitner)
- 2 Virtual learning environments for technology-oriented and enterprise learning (project MEDUSY by Jiří Kolář)
- 3 E-learning effectivity evaluation (project by Jaroslav Ráček)
- 4 **PhDs:** Jaroslav Škrabálek, Jiří Kolář, Martin Komenda

Modern Mobile Platforms

- 1 Apple iOS, Android, MS Windows Mobile 7 development (Jaroslav Škrabálek)
- 2 **PhDs:** Jaroslav Škrabálek

Scientific

- Standard GAČR project proposal with Charles Uni (MFF, Jarda Pokorný), Uni of Pilsen (FAV, Karel Matoušek)
- **iCom** (Uni Vienna, Renate Motschnig, Nino Tomaschek)
- **Semantic e-learning** (MU Rector's programme, Tomáš Gregar)
- **Albireo II Webtop** (FI Dean's programme, Martin Novák et al)
- Innovations in Learning (FRVŠ, Jarda Škrabálek)

Innovation Vouchers

The city of Brno fosters University—industry collaboration by so-called Innovation Vouchers (up to 6000 EUR granted + 2000 EUR co-financing). Vouchers@Lasaris so far:

- IT Logica (document management)
- Takeplace.eu (all-in-one conference service system)
- Mycroft Mind (Complex event processing tooling, concepts, studies)

Student Projects @ Faculty

Faculty Projects@Lasaris so far:

- Albireo — completed with awards
- WYSIWYG editor and RDF Browser based on Fresnel — completed
- Celebrio — completed, Winner of the Microsoft ImagineCup 2011 National Round, going to New York in July!

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Student Projects @ University

University Projects@Lasaris so far:

- SeLe (Semantic eLearning) — completed, semantic platform and a set of TeL-related, semantic-based tools

FESCA 2012

- 9th International Workshop on Formal Engineering approaches to Software Components and Architectures
- March 31st, 2012, Tallinn, Estonia (part of ETAPS 2012)
- ENTCS proceedings
- <http://fesca.ipd.kit.edu/fesca2012/>
- *Co-organization, responsible person: Barbora Bůhnová*

QoSA 2012

- 8th International ACM Sigsoft Conference on the Quality of Software Architectures
- June 25th-28th, 2012, Bertinoro, Italy (part of CompArch 2012)
- ACM proceedings
- http://qosa.ipd.kit.edu/qosa_2012/
- *Co-organization, responsible person: Barbora Bůhnová*

WCOP 2012

- 17th International Doctoral Symposium on Components and Architectures (formerly Workshop on Component-Oriented Programming)
- June 25th, 2012, Bertinoro, Italy (part of CompArch 2012)
- ACM proceedings
- <http://wcop.ipd.kit.edu/wcop2012/>
- *Co-organization, responsible person: Barbora Bůhnová*

Olympiad in Mathematics and Informatics

- Top-level competition on mathematical- and hard-to-solve algorithmic problems (incl. implementation)
- March-April 2011 the National Round in Brno/FI
- `http://www.fi.muni.cz/about/events_and_contests/mo2011/index.xhtml`
- *Co-organization, responsible person: Tomáš Pitner*

Software Summer Camp

- One-week summer school on advanced JavaEE, software development and management methods, technology, and tools.
- August-September 2011
- `http://www.ibacz.eu/-Software-Summer-Camp-2010-`
- *Co-organization, responsible person: Jaroslav Ráček*

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- Programming (particular platforms)
- Software engineering
- Enterprise systems and architectures
- Person-centered Approach
- Mobile platforms

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Programming (particular platforms)

- Java platform: from introductory OO programming to complex Java EE systems
- .NET platform: newer but approx. the same (in parallel/optional) as of content

Software engineering

- Analysis and Design of Systems /Ananas/ (foundations of SW engineering, for undergraduates)
- Team Project (optional)
- Advanced OO methods SW for design (lectures)
- Advanced OO methods SW for design (seminary/labs)

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Enterprise systems and architectures

- Java seminar (end-to-end desktop apps development)
- Enterprise Systems in Java
- (plans for spring 2012) Advanced Topics in Enterprise Java

Faculty of Informatics

- Lab of **Service Systems** (Zdenko Staníček and Ph.D. students)
- Lab of **Search and Dialogue Systems** (Luděk Bártek)

Masaryk University

- Institute of Computer Science: **Department of System Service Development** (Lukáš Rychnovský, Martin Osovský, Jan Konečný, Matej Bosák, Jaroslav Šeděnka, . . .)
- Technology Transfer Office (Honza Pavlovič, Jaroslav Škrabálek, Jan Slovák)
- Faculty of Science (Jiří Hřebíček and students)

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Spin-offs

- MycroftMind: Filip Procházka, Michal Oškera, Leonard Walletzký
- AdvaICT: Pavel Minařík

Other Institutional Partners

- **South-Moravian Innovation Center** (Jiří Hudeček)
- **Microsoft Innovation Center** (Michal Hrabí)

University of Vienna

- **Faculty of Computer Science**
- **Didaktisches Zentrum** (Renate Motschnig) — long term partner, teaching (Soft-skills for SSME), research, projects
- **Knowledge und Business Engineering** (Uwe Zdun) – teaching SOFTWARE ARCHITECTURES
- **Zentraler Informatik Dienst** (Hartmut Eich) – leading master thesis at FI
- Others (Sonja Kabicher, Michael Derntl, Simone Krieglstein) – research and/or master thesis at FI
- ERASMUS stays – Michal Kolínek, spring term 2011

Vienna / iCom Project

- **International Communication in the Context of ICT**
- Cross-border AT-CZ Cooperation Programme within EUROPEAN REGIONAL FUND
- **Didaktisches Zentrum** (Renate Motschnig) — scientific leader
- **Postgraduate Center** (Nina Tomaschek, Edith Hammer) – iCOM project leaders

- Team for **Software Architectures** (prof. Ralf Reussner)
- PALLADIO framework
- short-term mobility – Jan Konečný, Matej Bosák, WS 2010, SS 2011, s. . .

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RedHat

- Virtual learning environment, project **MEDUSY**
- `medusy.sourceforge.net`
- FI: Jirka Kolář, RH: Martin Marciniszyn, Radek Vokál, Petr Matoušek

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Microsoft

- On-line courses/.NET
- **.NET in teaching** at FI (many courses)
- MS: Filip Řehořík, FI/ICS: Bára Bührenová, Martin Osovský a kol.

- **Rational Team Concert** in teaching, extensions, case studies, . . .
- Software Summer Camp
- Teaching (Enterprise Java)

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Javlin

- **Extract-Transform-Load/ETL systems** (Clover ETL)
- Extensions, modules, . . .
- Integration with CEP applications
- Javlin: Jaromír Juřena, Michal Tomcsányi, David Štáva

Abstract

- **Community Systems** — development and integration with social networking systems (FB, Twitter)
- `bydleni.cz`
- Abstract: Josef Morávek, FI: Radek Ošlejšek, Tom Pitner, DP/BP studenti

Mycroft Mind

- **Complex Event Processing** — monitoring of network security, large infrastructure management, service systems
- `www.mycroftmind.com`
- **Network Security Monitoring** Cluster (MPO project)
- MM: Filip Procházka, FI: Tomáš Pitner, Jan Konečný, Matej Bosák, ICS: Martin Osovský, Lukáš Rychnovský

- Java Enterprise systems and technology
- Development tools and extensions (modules)
- **Software Summer Camp**
- IBA: Petr Adámek, FI: Jaroslav Ráček, Tomáš Pitner,
Master-, Bachelor- students

Goals

- Competitive in **primary research**
- **Excellence/leader in applied** (industrial) research and development
- Strategic contributors to **Science Park**
- Areas into **technology platforms**
- **Industrial projects** with Grant support (Technology Agency of ČR)
- Stable position in **teaching** (not extensive development, quality-oriented)
- Continuous success in innovative business
- Leaders in mobile platforms

Human Resources

- **Consolidation** in the core team (one new member urgently needed!)
- **Habilitations** planned/short-middle term (Barbora Bührenová, Radek Ošlejšek)
- Growing **number of PhDs** with other supervisors
- **Guest professors**
- Closer **cooperation with SSME**
- Closer **cooperation with Faculty of Science**