

## About Me

I love technology so much, I don't want users ever to have to deal with it.

I'm passionate about creating applications with an intuitive design that address real problems of real people. Currently, I'm into mobile apps and smart rural areas in developing countries



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## Professional Experience

m-Health Social Network  
Project for rural Myanmar  
2013 – 2014

**Co-founder, Tech Lead and Software Engineer** Together with colleagues from Switzerland and Bangladesh, we started a **m-health** project to develop a mobile **topic-based social network** for **basic health staff in rural areas** in Myanmar. The name "Mobile Competence Network" reflects the focus on developing a social network application that provides a platform to basic health staff in rural areas to **build competencies** by share **health-related information** about **topics**, **collect data** and access **teaching material**.

We travelled to Myanmar in October 2013 to meet with NGOs and again in February 2014 to present our project proposal at the **Ministry of Health**, in the capital **Naypyidaw**.

As the technical lead, I created the **conceptual design**. Currently, I'm implementing our system in **Python** as an **open-source** software. A key element of our system the **visual interaction** through topics. Topics are icons of concepts in the underlying **formal knowledge structures**. We chose pictures instead of words because understanding images comes naturally to people, users therefore won't require specific knowledge to decode the information. **Ontologies** and other well-defined knowledge structures define semantics of the **behavior** and **metadata** (medical) concepts to describe the content of messages and route messages.

University of Fribourg  
2008 – 2013

**Teaching Assistant** As a teaching assistant, I was in charge of the exercise classes for the courses in **eBusiness & eCommerce**, **databases** and **information systems** at master and bachelor level. Furthermore, I supervised master and bachelor theses. In the context of a professional education for high school teachers, in collaboration with other Swiss universities, I was **responsible for the exercise classes** for the lectures information systems and databases. I developed the teaching materials and supervised the exercise classes.

Cablecom  
2000 – 2004

**Unix Systems Administrator** In this position, I administered several SUN **Solaris** servers for **Apache**, Samba, FTP and OpenSSH. I was also responsible for the **FreeBSD** web server that hosted the **corporate web portal** and deputy administrator for the ISP-wide proxy server.

As a systems administrator, I was involved in the requirements specification process, development and launch of the Cablecom/Swissonline ISP platform. This platform consisted of **+140 Red Hat Linux servers**. My share of the task was managing DHCP, Apache and Samba, centralized servers and applications management with BaSH scripts and application maintenance and updates with customized RPMs.

HMS-KV Baselland  
1998 – 2000

**IT Support** In this position, I worked in IT support for Windows NT 4.0 servers and Windows 95 clients.

## Academic Experience

University of Fribourg  
2008 – 2013

**Doctoral Thesis** My research area is **human-computer interaction**. I was intrigued with understanding requirements and needs of people with dementia to **develop personalized assistive applications**. In my doctoral thesis "Requirements Elicitation and System Specification of Assistive Systems for People with Mild Dementia" I **developed a storyboard language**, which helps to **extract design knowledge** about the **context of use** from storyboards, without interfering in the **creative process** of storyboarding. This extracted design knowledge serves as basis to develop **context-aware assistive applications**. Storyboards are inherently **spatial**, I therefore developed an application to annotate the time in storyboards and then **generate a timeline** which shows how various interactions with the system are positioned in time with respect to each other.

2008

**Master Thesis** In my master thesis I was interested in the problem, how to design a scalable system for a hospital environment, and in which **domain knowledge** can be **codified** in a **intuitive manner**, by non-technical users. To that end, I chose the the **multi-agent** development framework Jade for scalability and for the **domain knowledge**, the **rule-based** engine Jess to describe the behavior of software agents. My contribution was to develop a two-way **integration** interface to provide a seamless communication between the **rule-based paradigm** and the **multi-agent paradigm**.

Hasselt University  
2010 – 2013

**Visiting Researcher and PhD Student** On invitation of Professor Dr. Kris Luyten, I went twice as a **visiting researcher** to the Expertise Centre for Digital Media of Hasselt University. After my first research stay, I was offered the option of a **dual PhD**, with Kris Luyten as second supervisor.

April 2010 – July 2010

During the first stay, we devised a **storyboarding** approach to **design assistive applications** for people with mild **dementia**. I developed an **Android-based** assistive application prototype, which acts as a **context-aware task manager** and communication system. This research was in the context of the A Touch Of Memory (ATOM), which involved **several Belgian universities**. This project is co-funded by the IBBT (Interdisciplinary institute for Technology), a research institute founded by the Flemish Government.

July 2011 – September 2011

During the second stay, we investigated how to provide **tool-support** for the storyboarding approach. Our aim was to provide an **intuitive** way for users to convey their **informal design knowledge** about the behavior of an interactive system in a **precise manner**. To that end, I devised a formal **storyboard language** and the corresponding **ontologies**, to describe the physical and temporal structure of storyboard panels. I also implemented a set of SWRL rules that infer Allen's **temporal relationships** form precise description of time provided by users.

University of Basel  
2008 – 2011

**Research Collaboration** Together with colleagues from the department of mathematics and informatics at the University of Basel, we conducted a multi-year research in **context-aware mobile applications** in **healthcare**. I investigated how context manifests itself in **adaptive user interfaces** to best support medical professionals. This project was funded by the Hasler Foundation, Switzerland.

CERN  
Summer 2008

**Internship** As part of my master studies at the University of Fribourg, I had the opportunity to do an internship at the **CERN in Geneva**. I **designed** and **developed** the indexing module in Python for "Invenio", the CERN's **document management system**.

Medgate  
Summer 2005

**Internship** I investigated the use of **medical ontologies** for knowledge management at the Swiss **telemedicine center** Medgate. The internship was in the context of my diploma thesis, at the University of Applied Sciences and Arts Northwestern Switzerland.

## Technical Skills

Programming and Scripting

I'm an enthusiastic **Python** developer, with several years of experience. Currently, I'm making extensive use of Python and **web2py** for development of the backend of the **topic-based mobile social network** for the mobile health project in Myanmar.

For my internship at the CERN, I developed the indexing component in Python, which parses and serializes the **RDF** metadata file. This module **reduced execution** time from almost a minute to a few seconds.

I've worked with **Java** for several years. For my PhD, I chose Java to develop storyboarding application. The determining factor was the **OWL-API**, which is written in Java and provides comprehensive tool support for **OWL** ontologies and integration with common reasoners. The front-end is written in **SWT**.

I also developed an Android-based context-aware assistive application, as part of my first research stay at the Expertise Centre for Digital Media in Belgium. For my master thesis I wrote an integration layer in Java between **Jess** and **JADE**. This integration layer allows to program the behavior of JADE software agents as a set of rules, which are executed in Jess. I also know **C** from algorithm classes at university.

As a systems administrator, I frequently used **BaSH** scripts to **automate** tasks, **react** to certain system events and **simplify** my command prompt environment. I use **Ansible** for my home network.

Knowledge Management

During my PhD, I developed an **storyboard ontology** to describe the **physical structure** of storyboards and a **storyboard temporal domain** ontology to describe events and the **temporal relationships** between events. The ontologies are represented in **OWL**. I used the ontology editor framework **Protégé** to develop ontologies and the **Pellet-reasoner** to infer temporal relationships.

My introduction to Protégé came with my diploma thesis in collaboration with Medgate. There I evaluated medical ontologies, such as **SNOMED**, **MeSH** and **UMLS**. I used these **medical ontologies** again in a master course, where I developed a data **integration application** for **healthcare processes**, with the **HL7** integration engine Mirth.

As teaching assistant for database courses, I used relational algebra to convey the concepts and **SQL** for the hands-on exercises with the database management systems **PostgreSQL** and **MySQL**. I developed a database computer science exercise series from scratch with PostgreSQL **PL/pgSQL**.

- Operating Systems During my position as a unix systems administrator, I **planned**, configured physical servers (SUN, Dell), and **installed** and **administered** servers with **FreeBSD**, **Solaris** and **Linux** (Red Hat, Gentoo, Debian). These servers ran **Apache**, **DHCP**, **ProFTPD**, **Samba**, **OpenSSH**, **Tomcat**, **Squid** and **Bind**. I used FreeBSD and Gentoo Linux as a Desktop operating system, before switching to **Mac OS X**.
- Networking I'm familiar with **TCP/IP**, which I needed as a systems administrator. I used tools such as **Nmap**, **snoop** and **ethereal** to analyze traffic in order to **diagnose** and solve problems.

## Education

- 2005–2013 University of Fribourg, Switzerland
- 2012–2013 Hasselt University, Belgium
- 2003–2004 University of Applied Sciences and Arts, Switzerland
- 2001–2003 Höhere Fachschule Für Wirtschaftsinformatik, Switzerland
- 1997–2001 Handelsmittelschule KV Reinach, Switzerland
- 1992–1997 Swiss School Association, Singapore

## Diplomas

- 2013 Doctor of Economics and Social Sciences (magna cum laude)  
University of Fribourg, Switzerland
- 2013 Doctor of Science: Information Technology Transnational  
University of Limburg, Belgium
- 2008 Master of Arts in Information Management (Summa Cum Laude)  
University of Fribourg, Switzerland
- 2005 Diploma (Bachelor-equivalent degree in Business Information Technology)  
University of Applied Sciences and Arts North-western Switzerland

## References

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## List of Publications

m-health, developing countries, ontologies, visual interaction

Joël Vogt, Eugenia Martin, Edy Portmann, Nasim Mahmud.-  
**Towards an SMS-based Social Network for Health Workers in Rural Areas in Myanmar.** In Proceedings of the 3rd International Conference on Informatics, Electronics & Vision, ICIEV'14, Dhaka, Bangladesh

storyboarding, temporal information, dementia, user-centered design

Kris Luyten, Andreas Meier, Joël Vogt. **Entwicklung einer Storyboard Language für Personen mit leichter Demenz.** In Reich S. (Hrsg.): Human Computer Interaction. HMD Praxis der Wirtschaftsinformatik, Heft Nr. 294, dpunkt Verlag, pages 58–65, Heidelberg Dezember 2013.

storyboarding, temporal information, data visualization, user-centered design

Joël Vogt, Kris Luyten, Mieke Haesen, Karin Coninx, and Andreas Meier. **Timisto: A Technique to Extract Usage Sequences from Storyboards:** . In Proceedings of the 5th ACM SIGCHI symposium on Engineering interactive computing systems, EICS '13. ACM, 2013

user-centered design, context, dementia, context-aware, assistive applications

Joël Vogt, Kris Luyten, Jan Van den Bergh, Karin Coninx, and Andreas Meier. **Putting Dementia into Context: A Selective Literature Review of Assistive Applications for Users with Dementia and their Caregivers.** In Proceedings of the 4th Conference on Human-Centered Software Engineering, HCSE 2012, pages 181–198. Springer, 2012.

storyboarding, context, context-aware, user-centered design

Nasim Mahmud, Joël Vogt, Kris Luyten, Karin Slegers, Jan Van Den Bergh, and Karin Coninx. **Dazed and confused considered normal: an approach to create interactive systems for people with dementia** . In Proceedings of the 3rd Conference on Human-Centered Software Engineering, HCSE 2010, pages 119–134. Springer, 2010.

dynamic interfaces, context-aware, e-health

Joël Vogt and Andreas Meier. **An Adaptive User Interface Framework for eHealth Services based on UIML**. In Proceedings of the 23rd Bled eConference, pages 409–422. Bled eConference, 2010

context, context-aware, e-health

Nadine Fröhlich, Andreas Meier, Thorsten Möller, Marco Savini, Heiko Schuldt and Joël Vogt. **LoCa - Towards a Context-aware Infrastructure for eHealth Applications** In Proceedings of the 15th Int'l Conference on Distributed Multimedia Systems, DMS '09, pages 52–57. Knowledge Systems Institute Graduate School, 2009

e-health, medical terminologies, system integration

Marco Savini, Joël Vogt, and Daniel Wenger. **Using the eSana Framework in Dermatology to improve the Information Flow between Patients and Doctors**. In Proceedings of the 21rd Bled eConference. Bled eConference, 2008

## Speaking Events

m-health, wellbeing, patient-centric design, developing countries, social media

**Mobile eHealth Coming Soon to Mobile Phone Near You.** - First International Seminar - eDemocracy &eGovernment. Quito, Ecuador (2013)

storyboarding, temporal information, dementia, user-centered design

**Requirements Elicitation and System Specification of Assistive Systems for People with Mild Dementia** First International Seminar - eDemocracy &eGovernment. Quito, Ecuador (2013)