VIScon 2023

Program

Welcome

Welcome to VIScon 2023

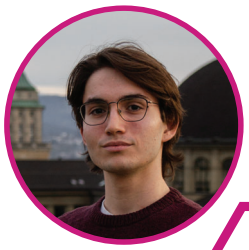
We are incredibly excited to once again welcome you all to the VIScon Symposium.

So sit back, relax and enjoy the 24 captivating talks, 7 exciting workshops and 3 thrilling escape rooms that are all waiting for you today! And don't forget to come by the exhibition in the main hall to check out the coolest student projects and video games you have ever seen.

Hungry? Thirsty? Don't worry! We've got your back with free food and drinks all day long! And wait for it... a delectable apéro as the grand finale! Yes, that's right, you can sip on a cup of coffee while debating the merits of tabs vs. spaces. Computer Science has never been this delicious.

We sincerely hope you enjoy this year's edition of VIScon, and, most importantly, have lots of fun.

Diego de los Santos
Head of Symposium



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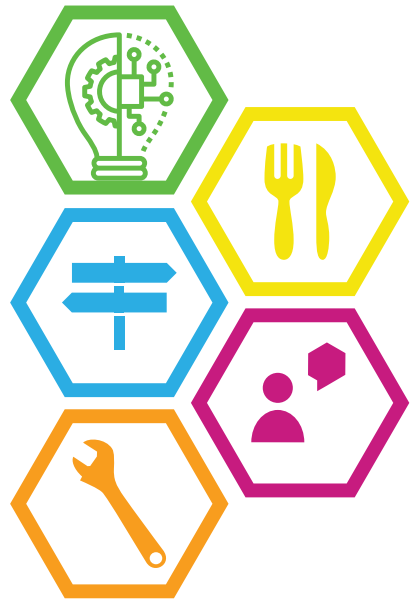
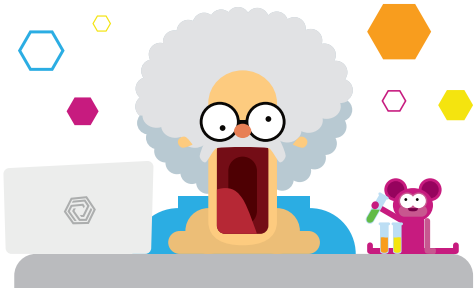




Program

	E1.1	E1.2	D1.1	D1.2
9	Breakfast			
9:10				
9:20	**Hello world** — *Audimax F30*			
9:30	**Opening Speech:** Matthias Geel, ipt — *Audimax F30*			
	Keynote: Prof. Dr. Dennis Komm, ETH Zürich — *Audimax F30*			
10				
10:30	From Two Pizzas to Two Ways of Thinking — *Ann Harding, SWITCH*	Understanding FIDO2's Role in Stopping Phishing Attacks — *Yves Bieri, Compass Security*	Digital Facts and Myths: "You've got it all wrong!" (Sometimes. Maybe.) — *Robert Würgler*	Heroes, Villains, and Victims, and GPT-4 — *Dominik Stammbach and Elliott Ash, ETH*
11				
11:20	Software City: Intuitive Software Visualization for Computer Science Education — *Frieder Loch, OST*	Prognostic Modeling of Cognitive Decline with Confidence Quantification — *Bruno Hebling Vieira, UZH*	Beyond the AI Hype — *Nicolas Klose, ETH; Amir Mikail and Max Schrimpf, Cyberfy*	The User: the Unknown Species - Successful Products through User Research — *Urban Kronenberg, Ergon*
12				
12:50				
13	Lunch			
	How to "Avoid a Curse to Everlasting Generations"? — *James Heim*	Scripted Development Environment — *Christian Lang, Supercomputing Systems AG*	Developments in Radiation Therapy — *Alexis Marque, Varian*	Keeping Waterways Clean with Machine Learning — *Silvan Melchior and Maria Paola Bianchi, Zühlke*
13:40				
14	The AI Revolution: Exploring the Potential of GPT-Based AI Language Models in Trading — *Roy Verbaan, Optiver*	Einstein, Determinism, and Quantum Theory — *Ghislain Fourny, ETH*	Architecture of a Real-Time Data Distribution Platform — *Samuel von Baußnern, D-ONE*	JavaScript and Databases: a Perfect Match — *Noman Sheikh and Lucas Braun, Oracle*
14:50				
15	Spray Painting ETH (in Mixed Reality) — *Patrick Misteli, Microsoft*	Things I've Seen as a Security Consultant — *Daniel Kaufmann, Cyberfy*	Life of a Tech Lead — *Sandra Weber, Google*	The Promise and Perils of Using Artificial Intelligence in Software Development — *Marius Koch, Cléa Benz and Patrick Amrein, Ubique*
15:40				
16	Winning Your First Customers — *Dr. Marc Brandis and Manuel Studer, Mimicry*	The Cat-and-Mouse Game — *Aczel Garcia and Chiara Kessler, Deloitte*	How to build a Federated Open Source Serverless Tensor Data Lakehouse for Petabyte Scale Foundation Model Training — *Romeo Kienzler, IBM*	Mastering Mind Traps: Unravelling Cognitive Biases — *Julien Silva, Ergon*
16:30				
16:40	**Closing Speech:** Reto Ischi, Airlock — *Audimax F30*			
	Goodbye World — *Audimax F30*			
	Apéro			

Entrepreneurship · Ethics in CS · Machine Learning/AI · Software Engineering
Interdisciplinary · VIS Alumni · Research/Academia · Security

25 min
40 min
60 min

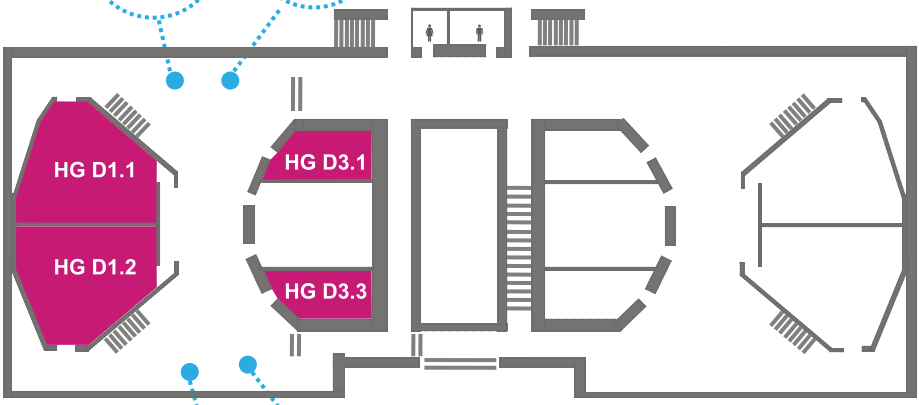
WORKSHOPS & ESCAPE ROOMS

	D3.1	D3.3	E21	F33.4
9:45				Hack the Hacker - the escape room *SWITCH*
10				
10:15	Hands-On Hacking Advanced - a Sneak Peek into OSCP *Yves Kraft, Oneconsult AG*	Architectural KATA: Solve a Real-World Software Architecture Problem *Michael Gut, Ergon*	The Bitcoin Game *Luca Brilhaus and Marcus Dapp, ETH*	
11				
12				
12:45				Hack the Hacker - the escape room *SWITCH*
13				
13:10			Leading with Impact *Eeva Tervahartiala and Iris Hunkeler, Netlight Consulting*	
14	Integrating Fairness into Machine Learning Applications *Christianna Toliopoulou, Bernhard Vennemann, Alexandros Kalimeris, D ONE*	Create Your Own Cloud Infrastructure Like a Pro *Florian Stelzer and Weili Gao, ipt*		
15				Hack the Hacker - the escape room *SWITCH*
15:30			How to Deal with a Cyber Crisis *ETH Cyber Group*	
16				
17				

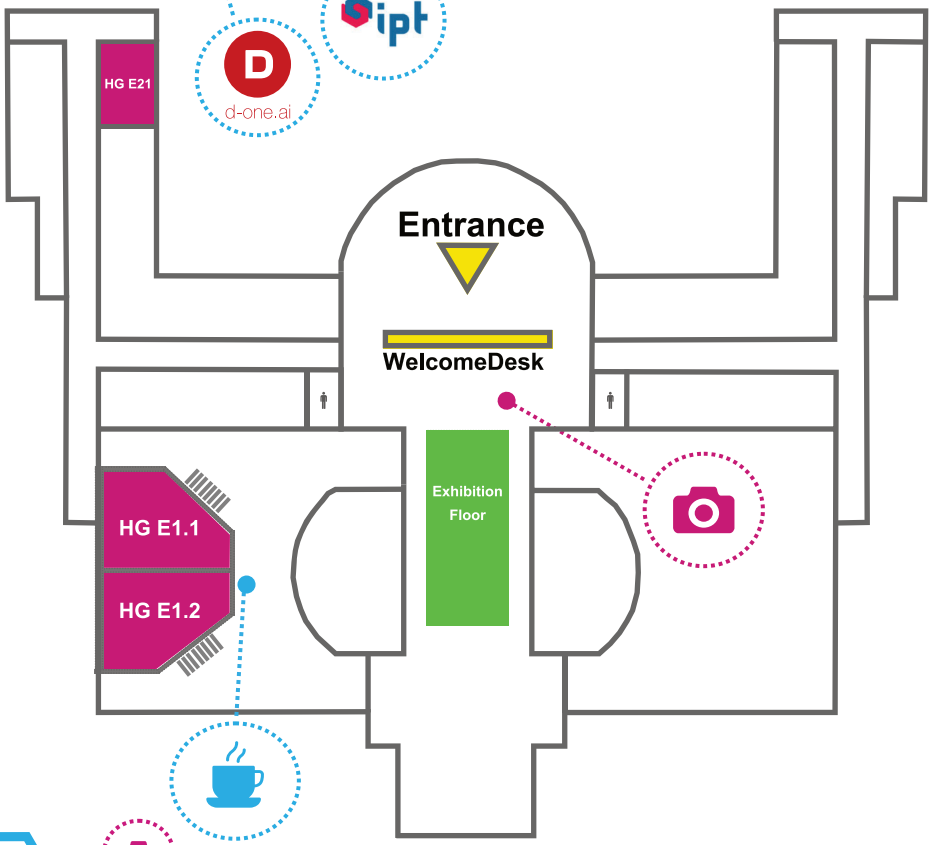
Entrepreneurship
Interdisciplinary
Machine Learning/AI
Ethics in CS
Software Engineering
Security

Floor plan

D Floor

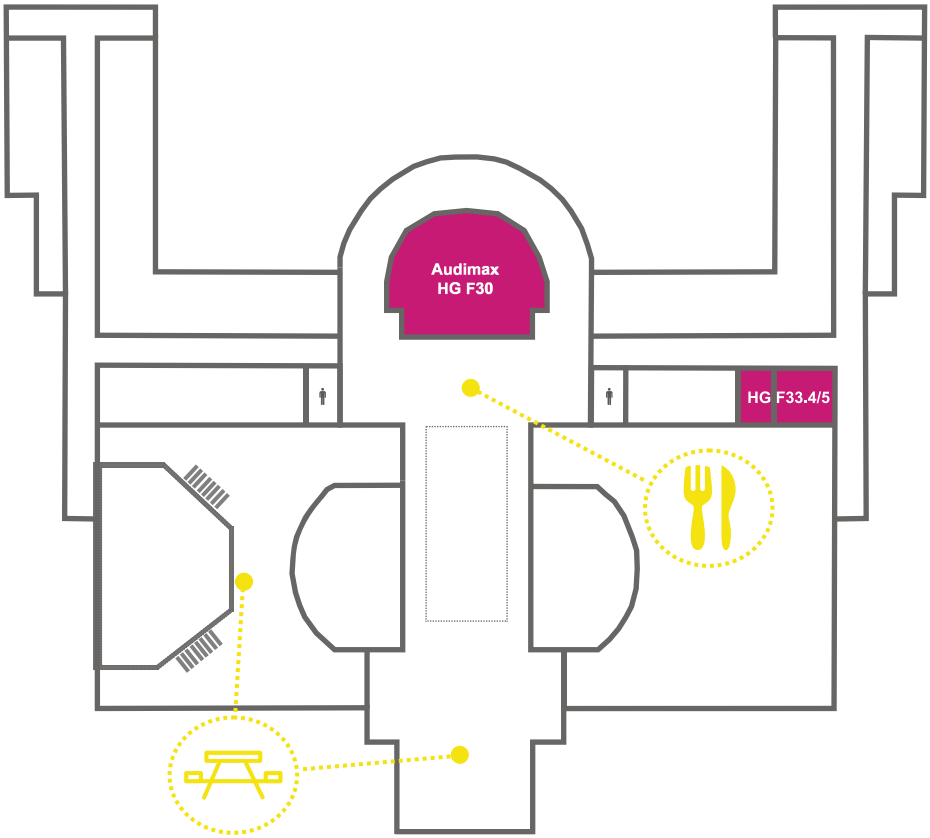


E Floor



Visit our photo-booth and take a picture of you and your friends!

F Floor



You can find some tables here if you want to take a break and eat.

The warm lunch will be served in front of the Audimax.

Food

Breakfast

8:30 - 9:30

After registering, feel free to grab a drink and something to eat from the distributed breakfast tables.

Lunch

11:30 - 14:00

We offer both meat and vegan warm meal options for you to choose from.

Meat Option

G'hackets with Hörnli

macaroni with minced beef, served with grated cheese and apple sauce

Vegan Option

Green Thai-Curry

with fresh vegetables and bamboo sprouts, served with Jasmin rice

Please adhere to the guidance system when getting your dish and enjoy your meal in the designated areas. Kindly dispose of any leftover food in the designated bins. Your cooperation is greatly appreciated.

Apéro

17:00 - 18:30

You are welcome to stay and stick around after the talks to chill out, do some networking or simply enjoy the view from the top of Zurich. The apéro will take place on Polyterrasse which is to the back of the building. (In case of bad weather, the apéro will take place on the F floor).

There will be fridges in front of the lecture halls. A coffee bar can be found on the E-floor (see floor plan).

Opening

9:20 9:30 F30

Matthias Geel

Matthias Geel is an ETH Alumnus and currently works as Principal Architect at Innovation Process Technology AG (ipt). After finishing his PhD in Computer Science in 2015, he started as an IT consultant in the private sector.
At ipt, he mainly consults large Swiss health insurance companies as well as the Federal Department of Defence, Civil Protection and Sport in terms of of large-scale platform deployments (infrastructure as code), modern software development (e.g. CI/CD, event-driven architectures) and DevOps best practices.

Keynote

9:30 10:10 F30

Prof. Dr. Dennis Komm

With an incredible passion for communicating the fundamental ideas of computer science to students of all ages, Professor Komm is a true advocate for computational thinking.

Beginning his academic pursuits at RWTH Aachen University and QUT Brisbane, Professor Komm earned his PhD at ETH Zurich in 2012. Since then, he has held various roles at ETH, from postdoc to lecturer, eventually becoming a senior scientist. His career has also included teaching positions at institutions such as the University of Zurich and a professorship at PH Graubünden.

What sets Professor Komm apart is his dedication to teaching computer science concepts at every level, starting from primary school.

He goes beyond the classroom, offering further education courses for computer science teachers, emphasizing the importance of quality computer science education.

In addition to his passion for teaching, Professor Komm is a researcher at heart. His interests span various facets of computer science, including approximation algorithms for challenging optimization problems, reoptimization of optimization problems, and advice complexity in different settings.

ETH zürich

Closing

16:30 16:40 F30

Reto Ischi

In his early teens, Reto found himself keen to pursue a career in computer science. He started out by completing an IT apprenticeship and later studying Computer Science at FH Zurich and ETH. After finishing his studies, he joined Ergon, taking on the role of Software Developer for Airlock (a web application firewall). A decade on, Reto now leads Airlock's Security Product Development Division, while also serving as a Lecturer in Cyber Security at the Eastern Switzerland University of Applied Sciences. His unwavering passion for cybersecurity has driven him for over 25 years and continues to do so even today.

AIRLOCK®
SECURE ACCESS HUB

Talks

HG E 1.1 10:30

From Two Pizzas to Two Ways of Thinking

IT systems and infrastructure operations are increasingly automated and developed using DevOps and Site Reliability Engineering principles. What are the human factors that make this possible and also challenging? This is a journey through some of the interesting numbers and laws from social science, systems theory and neurobiology that influence our roles inside technology.

Tags

DevOps Interdisciplinary Industry trends Entrepreneurship

Ann Harding

Ann has worked for SWITCH since 2007 on everything from the .ch domain registry, to backbone networks, AAI and cloud and running EU projects. She is currently Reliability Engineering Coach, helping different teams run their infrastructure and services reliably and sustainably. Ann has gained third-level qualifications in Arts and Humanities and Computer Science and a Master's qualification in Cultural and Media studies. Integrating humans and technology remains one of her favourite things.

SWITCH

HG E 1.2 10:30

Understanding FIDO2's Role in Stopping Phishing Attacks

In this talk, we explore the limitations of traditional 2FA and present FIDO2 as a new authentication standard.

Through a live hacking demonstration, attendees will see the weaknesses of traditional 2FA. FIDO2 eliminates many of those issues and allows online services to enhance security, protect against common threats like phishing, and provide a seamless and secure authentication experience.

Tags

Security Demo

Yves Bieri

Yves has been involved in IT security for a long time and has been working as an IT Security Analyst at Compass Security since 2019. Previously, he completed his computer science studies with a focus on IT security at ETH Zurich. In his master thesis, he created a program that automatically generates attacks to bypass firewalls.

In his job, he mainly deals with security analysis of web applications , external networks, cloud infrastructures, as well as iOS applications. In his spare time, Yves often plays CTFs, focusing on binary exploitation.

HG D 1.1 10:30

Digital facts and myths: "You've got it all wrong!" (Sometimes. Maybe.)

Robert Würgler

Security & ICT strategist, owner of wuergler-it.ch, health system tinkerer, co-initiator of the "Cyber and Digital Economy Research Network"

Let's have fun with claims that we may hear repeatedly. What would you say?

Tech, ML, AI ... destroy jobs. (No)
Regulation, privacy laws ... hinder innovation. (No)
We have to get tracked for personal information in exchange for free services. (No)
Better data [exchange] will reduce health cost [will do xyz]. (No)
[Social media] You are not the customer. You are the product. (No)
Data are the new gold [oil]. (No)

But wait: wouldn't "it depends" be a prudent answer? Let's discuss.

Tags

Research / Academia Interdisciplinary Privacy Ethics in Computer Science

Digi–Oek.ch

HG D 1.2 10:30

Heroes, Villains, and Victims, and GPT-4

Narratives are everywhere and an important aspect of society - thus they tell us a lot about the world we live in. Also, narratives often contain certain characters, such as heroes, villains and victims.

In this talk, we demonstrate how to use GPT-4 to extract heroes, villains and victims from political text. And we attempt to explain what the extracted characters can tell us about the world we live in.

Tags

Data Science / Big Data
Machine Learning / AI
Interdisciplinary
Research / Academia

Dominik Stammbach

Dominik is a PhD Student at ETH Zurich working on Natural Language Processing, and using text as data methods for interdisciplinary Social Science research.

Elliott Ash

Elliott Ash is Assistant Professor of Law, Economics, and Data Science at ETH Zurich, studying human judges and building robot judges.

ETH zürich

HG E 1.1 11:20

Software City: Intuitive Software Visualization for Computer Science Education

Frieder Loch

It is difficult to relate programming code to the purpose of the application, especially for inexperienced programmers. The abstract nature of programming code can be a barrier to learning computer science in school.

We developed a web-based virtual reality application that uses an intuitive metaphor, a city, to represent the structure of software. We evaluated this approach in school computer science classes and will report on the results of these experiences.

Tags

Interdisciplinary
Research / Academia
VR / AR / MR
UX Design

OST
Ostschweizer Fachhochschule

HG E 1.2 11:20

Prognostic modeling of cognitive decline with confidence quantification

The translational application of precision psychiatry demands uncertainty estimation and calibration. In this talk, we will go through the process of identifying and exploiting opportunities to apply probabilistic machine learning to prediction of future cognitive decline from brain imaging and risk factors, and how this enables confidence quantification and better prognostics.

Tags

Machine Learning / AI Data Science / Big Data
Interdisciplinary

Bruno Hebling Vieira

Bruno Hebling Vieira is a postdoc at the Psychology Department of the UZH. Medical Physicist with a PhD in Physics Applied to Medicine and Biology, he works on automated neuropsychiatric prognosis and on the development of methods for the characterization of cognitive decline in normal aging and in neurodegenerative diseases from brain MRI through the principled use of machine learning.

Universität Zürich[UZH]

HG D 1.1 11:20

Beyond the AI Hype

Chat GPT ignited a marketing frenzy around AI, emphasizing its operationalization for wider accessibility. The talk discusses existing GNN use cases and forthcoming features in productivity software.

The first part explores the transformative impact of GitHub Copilot and similar technologies on developers' work.

The second part outlines major tech companies' adoption of LLMs, such as Bing's integration with OpenAI, Microsoft Copilot's diverse applications, and Google Bard. It also addresses the proliferation of chatbots.

The third part shifts focus to impending regulations and societal responsibilities in a world where AI can create convincing text and images.

Tags

Machine Learning / AI
Industry trends
VIS Alumni

Amir Mikail

Amir Mikail is a Senior Consultant and COO at Cyberfy Consulting AG. During his studies in Science, Technology and Policy at ETH, he focused on Data & AI governance. He's also closely following the regulations and worked on governance and regulatory frameworks for AI.

Nicolas Klose

After finishing his MSc. in Mathematics at ETH, Nicolas Klose spent some time working as a consultant for cloud technologies and software development. He recently decided to return to ETH to pursue a Ph.D. in the Programming Methodology group. His research focuses on the inference of specifications for program verification, both with "classical" methods and ML.

Max Schrimpf

Max stared his carreer in IT as Software Developer. After his Computer Science Bachelor at ZHAW, he joined ETH Zürich for his CS Master. Outside of the lecture halls he spend most of is time at ETH supporting VIS/VSETH as system admin, co-founder of the VIScon, and in various other roles. He now is a senior expert at Cyberfy.

cyberfy consulting

HG D 1.2 11:20

The user: the unknown species – successful products through user research

Who are the users of our software? How can we be sure that we are not overlooking their needs? And how do we separate the signal from the noise, the facts from the assumptions?

With a reasonable effort, we are able to gain valuable insights that make all the difference between success and failure in a software project.

In this talk, Urban Kronenberg demonstrates the importance of user research and provides tips, tricks, and techniques for successful user research activities.

Tags

UX Design Interdisciplinary

Urban Kronenberg

Urban Kronenberg is a senior user experience architect with Ergon Informatik AG. His work involves being the user's advocate, putting their needs front and centre so that digital products will be easy to use. For Urban, this aspect is fundamental, because in today's highly competitive markets a great user experience makes all the difference between success and failure. Before working in the software industry, Urban worked as a designer for brands such as Volkswagen, Canon and Swiss International Air Lines.

ergon

smart people – smart software®

HG E 1.1 12:50

How to avoid "a curse to everlasting generations"? *

Never have we invented and used as much technology as in our times. Yet technologies don't just create desired effects – problematic ones are created as well. There's growing evidence that negative effects are developing in step with our overall technological development: becoming more numerous and complex.

Is our sense of excitement for technological approaches mirrored by an equally big sense of responsibility? Is our culture of technology adequately managing created risks? If not, what does that mean for the creators of technology?

* Quote from "Frankenstein" – Mary Shelley

Tags

Ethics in Computer Science
Interdisciplinary
Sustainability
Opinion piece

James Heim

Lic.oec.publ. (Master of Economics).

Worked for a consulting company and then for the business development agency Greater Zurich Area, for which I relocated to San Francisco.

Since 2007 I study the impact of our current technology culture (the way we invent and apply technology).

I also work on a farm.

HG E 1.2 12:50

Scripted Development Environment

How can a software development team focus on writing production code without losing time on maintaining the development toolchain? How can the team members collaborate efficiently without obstructions due to tools that work incorrectly?

This talk will address these questions. The solutions discussed help reduce the "It works on my machine" problem by making not only the production code but also the whole development environment reproducible, using technologies well-established in infrastructure management or DevOps like Ansible or Docker.

Tags

Software Engineering Opinion piece DevOps

Christian Lang

Senior C++ developer with experience in embedded Linux environments like Yocto and a fascination for clean code and Git.

HG D 1.1 12:50

Developments in Radiation Therapy

In 2025, we will celebrate the 125th anniversary of radiation therapy.

During this talk, we will briefly review the history of radiation therapy.

We will focus on the last decades developments when the growth of technologies and computer science allowed significant changes and made radiation therapy a common care pathway for patients with cancer disease.

We will also discuss the upcoming changes that will allow radiation therapy to deliver more personalized and accurate care.

Tags

Software Engineering
Computer Systems
Industry trends

Alexis Marque

Alexis Marque is a Sr. Product Manager for Treatment and Imaging solutions at Varian Medical Systems Imaging Lab, GmbH in Baden-Dättwil with a main focus on Imaging. Before joining Varian in 2022, Alexis spent 10 years in the Medical Imaging industry.

varian
A Siemens Healthineers Company

HG D 1.2 12:50

Keeping waterways clean with Machine Learning

How might we use machine learning to reduce time spent on manual review while accurately identify-ing lapses?

We addressed this challenge with the Singapore Public Utilities Board (PUB), whose task is it to make sure that any constructions site's Earth Control Measure (ECM) submission adheres to the necessary re-quirements, to ensure the site poses no damage to the environment.

We are going to dive into how we tackled this problem, together with the learnings we had during the project.

Tags

Machine Learning / AI
Cloud Computing
Sustainability

Silvan Melchior

Silvan Melchior, Expert Data Scientist, joined Zühlke in 2019 after completing his MSc ETH in Computer Science with focus on machine learning and computer vision. His main area of expertise includes machine learning, especially deep learning and computer vision.

Maria Paola Bianchi

After completing her PhD in Computer Science, Maria Paola Bianchi worked as Postdoctoral Researcher at ETH and joined Zühlke in 2016 where she is working as an Expert Data Scientist. Her main area of expertise includes formal methods, algorithm design and analysis, statistics and probability theory.

zühlke
empowering ideas

HG E 1.1 13:40

The AI revolution: Exploring the potential of GPT-Based AI language models in trading

With the rise of GPT-based AI models, market makers like Optiver are experiencing a shift in how we dissect real-time market data and news. These advanced tools enable us to make swift, informed decisions, effectively manage risks and adapt to market changes with unprecedented speed.

Join our talk for a deeper insight into this revolution, demonstrating how AI language models have the potential to enhance decision making and reshape our trading strategies.

Tags

Industry trends
Data Science / Big Data
Machine Learning / AI

Roy Verbaan

Roy is a Quantitative Researcher at Optiver, and holds a MSc in Quantitative Finance from Erasmus University Rotterdam.

Since joining over 5 years ago he has worked on various topics with the end goal of helping Optiver's single-stock trading business to scale. With a limited number of traders we intend to exponentially increase the number of products we trade, which we can only achieve by making our decision making more data-driven.

Roy specializes in the topic of building frameworks that allow us to translate real-world events such as macroeconomic and company-specific news releases to data and quantifying how we expects our products to behave in such situations.

Optiver

HG E 1.2 13:40

Einstein, determinism, and quantum theory

Albert Einstein is famous for many things, including for advocating that quantum theory is an incomplete description of reality that can be extended to a more powerful theory -- involving local realism and hidden variables.

Today, the mainstream opinion is that he was wrong. And yet, in this talk, I will explain why I think he was right, to the point of having already committed almost 20 years of my life working on this. I will describe the impact that him being right would have on our definition of free choice, and show what an extension theory with more predictive power could look like.

Tags

Research / Academia

Ghislain Fourny

Ghislain Fourny is a senior scientist at ETH Zurich with a focus on databases and game theory. He holds a Master of Science in Computer Science and a Doctorate of Science from ETH Zürich.

ETH zürich

HG D 1.1 13:40

Architecture of a real-time data distribution platform

Ever wondered how tracking and statistical data from a sports event finds its way into your apps in real time? What the stack looks like, how it's monitored and how they intervene? Come and find out!

We'll look at the architecture, the technologies, how they fit together, how we detect possible issues and how we react to them, how we process terabytes of data in a high-throughput, low-latency setting, do joins on streaming data, scale infrastructure and enable automatic communication between multiple companies. All in real time.

Tags

Software Engineering
Opinion piece
Industry trends
Data Science / Big Data

Samuel von Baußnern

Samuel has worked as a Software & Machine Learning Engineer and Data Scientist at various startups. Now at D-ONE he builds real-time, low-latency platforms and applications. Providing solutions to tricky problems in interdisciplinary environments and an unquenchable thirst for learning is what drives him day to day.

D ONE

HG D 1.2 13:40

JavaScript and Databases: a Perfect Match

Oracle 23c just released with in-database JavaScript application programming, powered by GraalVM. JavaScript boosts developer productivity because of its popularity and availability of open-source code.

But what does it take to make a JavaScript runtime (GraalVM) work (efficiently!) in a complex system like a database (Oracle) and scale to thousands of users?

This talk will not only answer this question, but also show JavaScript application development live in the database.

Tags

VIS Alumni
Computer Systems
Software Engineering
Research / Academia

Noman Sheikh

Noman Sheikh is a researcher in Multilingual Engine Team at Oracle Labs Zurich. With a robust background in both machine learning and operating systems, he has a passion for exploring the synergy between these two dynamic disciplines. Noman enjoys engaging in insightful discussions with fellow enthusiasts and experts alike.

Lucas Braun

Lucas Braun is a consulting technical program manager and researcher at Oracle Labs Zurich. Being a database researcher at his core, he also started looking at how databases compose with programming languages and compilers in the context of Oracle Database Multilingual Engine. Lucas graduated from ETH with a doctoral degree in early 2017 and has become a regular guest lecturer at ETH, ZHAW and FHNW.

ORACLE

HG E 1.1 14:50

Spray Painting ETH (in Mixed Reality)

Did you ever want to spray paint ETH? Probably (hopefully?) not, yet here we are.

Mixed Reality continues to be a valuable asset in the industrial metaverse. After placing a hologram, it should be viewable at the same location by a different device at a later time. Common solutions to persist holograms include using QR codes or spatial anchors. These solutions work well, but have limited area of effect. We are showing a new way to persist holograms in an area that spans entire rooms.

Inspired by the popularity of "drawing with a HoloLens" at VIScon21, we will showcase the above concepts, by bringing back the Graffiti app, now equipped with the added functionality of sharing and persisting holograms with each other.

Tags

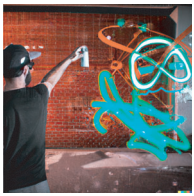
Internet of Things
VR / AR / MR
Computer Vision / Graphics
Software Engineering

Patrick Misteli

Patrick finished his Masters in Computer Science at ETH in 2017. During his his master thesis at Disney Research Zürich he started working with the HoloLens 1st gen and immediately fell in love with it.

One month after graduating he started his career at Microsoft in Paris. Since then he moved back to Switzerland and is now a Technical Program Manger for the Mixed Reality and AI Lab for Microsoft Zürich working for Marc Pollefeys who is also part time Prof at ETH.

Throughout his career, Patrick has passionately delivered presentations on mixed reality subjects, simplifying complex concepts to make them accessible to diverse audiences. Past demos include "Playing Beerpong in Mixed Reality", "Playing fetch with a robot" and "Visualizing Music in AR in real-time".



HG E 1.2 14:50

Things I've seen as a Security consultant

As a cyber security consultant that worked in the industry for a long time, I would like to share some insights into this broad field based on two of my favorite projects:

1. Evaluation of a threat intelligence provider, including definition of cases like data or credential leaks and performing an RFP.

2. Evaluation of a deception solution including requirements definition and doing a comprehensive proof of value.

You will also see why companies need these types of solutions.

Tags

Security

Daniel Kaufmann

Passionate about cyber security, especially cyber defense, cloud security and digital workplace.

I have been working in the security industry for more than 10 years including more than 5 years as a consultant specialized in Cloud Security, Cyber Defense and Digital Workplace. Previously I made a career in banking but soon moved into project management because I love the change.

cyberfy consulting

HG D 1.1 14:50

Life of a tech lead

What to consider when adding a new service? Why are time estimates almost always wrong? How do you manage tech debt accumulating over the years?

My time at ETH has taught me communication protocols, algorithms, software architecture and much more. But many of the challenges in software engineering I've only faced after starting my first full-time job. Now 10 years later I'm responsible for the technical well being of a product used all around the world. In the talk I'll share my insights and experience into some of the most common challenges in software engineering.

Tags

Software Engineering VIS Alumni

Sandra Weber

Sandra is a senior software engineer at Google and tech lead for Google Tasks Web here in Zurich. She has a master in computer science from ETH and 10 years experience developing web applications at different scales.

Google

HG D 1.2 14:50

The Promise and Perils of Using Artificial Intelligence in Software Development

With the recent developments in artificial intelligence, especially language models, there is an interesting new way of working. It offers excellent support during development of software or similar – but not without its caveats: how can the resulting product be classified in regards of intellectual property, copyright laws and how can one prevent possible infringement of intellectual property. Further, what ethical implications result from the use of artificial intelligence, especially regarding possible bias in the underlaying training data?

Tags

Ethics in Computer Science
Machine Learning / AI Software Engineering


Cléa Benz & Patrick Amrein

Cléa and Patrick both work at Ubique and help develop some of Switzerland's most used mobile apps and the respective infrastructure. Whereas Cléa is heavily involved in developing Android mobile apps, Patrick rather helps in developing backend systems. Both are part of Ubique's security team to support clients in sticking to best practices. Further they are trying to make the static and dynamic analysis of mobile apps less of a hassle.

Marius Koch

Marius is a lawyer fresh of his bar exam with an interest in IT/Computer Science. He has worked in different law firms as well as in small and large corporations. During his studies at University of Basel, he became the go-to option for his friends and family for all legal questions (a fate most law students share). Through these experiences he realized the importance of communicating legalese in a simple and understandable manner to people outside of the legal ivory tower.

ubique

HG E 1.1 15:40

Winning Your First Customers

Acquiring your first customers can be an arduous task. Even if several companies might show interest in your product, finding someone willing to take the leap with a yet unproven product can be a hurdle.

In this talk, we will delve into the adoption cycle of new technology products in the market and demonstrate how it can effectively help to shape your strategy. Drawing on our own startup experiences, as well as insights from other entrepreneurs and investors, we equip you with actionable insights that can be applied to your own project.

Tags

Entrepreneurship

Manuel Studer

Manuel Studer, Co-Founder at mimicry AG, has completed his BSc and MSc degree in Computer Science at ETH Zurich. Besides his studies, he was active as a teaching assistant, a research assistant and also served as the President of the ETH Entrepreneur Club.

Dr. Marc Brandis

Dr. Marc Brandis, Co-Founder of mimicry, has been advising enterprises and startups on strategic IT topics for more than twenty years. He teaches at ETH Zurich and serves on the Board of Directors of ETH Juniors, promoting knowledge transfer between academia and industry.

mimicry

HG E 1.2 15:40

The Cat-and-Mouse game

Generative AI has taken the world by storm. The most notable example is ChatGPT; released in November 2022, the service already generates 1 billion visitors per month. While ChatGPT stands as the poster-child for generative AI, there are numerous other models available, such as BERT, GROVER, CTRL, and Transformer, each with its own capabilities.

Over the coming years, generative AI models are expected to proliferate, serving purposes ranging from language and image generation to data augmentation and anomaly detection. But, alas, all that glitters is not gold. Alongside the tremendous potential for positive applications, there exists an equally significant potential for innovative hacking and nefarious online activities supported by AI.

Tags

Machine Learning / AI Security Industry trends
Interdisciplinary

Aczel Garcia

10 years of professional experience in scientific research and 5 in Machine Learning and Big Data consulting. I am a business-oriented professional with both scientific and technological backgrounds, specialized in leading Machine Learning and Big Data initiatives to power technological innovation and enterprise digital transformation strategies.

Chiara Kessler

Chiara is a Assistant Manager at Deloitte's Risk Advisory practice in Switzerland, with a focus on crisis and operational resilience. She has supported various banks and insurance companies in designing policies, processes and controls to establish IT resilience. She gained extensive knowledge and subject matter expertise working in Apple's crisis management team based in London, where she supported crisis planning and response globally. Chiara is certified ISO/IEC 27001 Lead Implementer & Lead Auditor and holds an MA in International Affairs from Johns Hopkins School of Advanced International Studies (SAIS) and a BSc in International Business from the University of Groningen.

Deloitte.

HG D 1.1 15:40

How to build a federated open source serverless tensor data lakehouse for petabyte scale foundation model training

Romeo Kienzler

At IBM Research we are dealing with triple-digit petabyte scale earth observation and atmospheric physics data spread among different cloud and HPC data centers around the globe.

Based on open source and open standards we've build a tensor data lakehouse capable of streaming random tensors directly from large virtual super-cubes from disk to GPU memory on GPU clusters using state-of-the-art hardware.

We've used this system for training our latest generation of geospatial-temporal foundation models. We also explore use cases in neuroscience and genomics.

Tags

Data Science / Big Data
Machine Learning / AI
Cloud Computing
Research / Academia

IBM

HG D 1.2 15:40

Mastering mind traps: unravelling cognitive biases

This 30-minute presentation on cognitive biases covers the basics of what they are, the impact they have on decision-making and problem-solving, and strategies for mitigating their effects.

Real-world examples are used to illustrate their impact, and the audience is encouraged to continue learning about them and applying strategies to overcome them in their personal and professional lives.

Tags

Interdisciplinary UX Design

Julien Silva

Julien brings a vast amount of experience in design, usability and user research. He has been working as an interaction designer since 2005 and as a UX designer for 10 years, both at usability agencies and startups such as GetYourGuide and Scandit. He's excited to lead complex UX projects at Ergon and to share his knowledge with anyone who's interested.

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Workshops

HG D 3.1 10:15

Hands-On Hacking Advanced – A sneak peek into OSCP

Yves Kraft

In this workshop we will take a look into the diary of a penetration tester and learn about offensive tools to make infrastructures and applications more secure. Using real examples, you will get to know the procedure of penetration testing.

In addition, you will learn numerous tips and tricks from experienced penetration testers, get to know tools and techniques and apply the knowledge directly and interactively.

Tags

Ethical Hacking Security Interactive

oneconsult
together against cyberattacks

HG D 3.3 10:15

Architectural KATA: Solve a real-world software architecture problem

The Japanese word kata refers to exercises for refining techniques in martial arts. Software development adopts a similar practice.

In architectural katas, small groups of developers and/or software architects practise proposing different architectural approaches and analysing and discussing the inevitable trade-offs that impact system qualities. How would you sketch the design? What architectural style do you think fits best? Don't miss out! We invite you to join us for this very creative experience.

Tags

Software Engineering
Industry trends
Entrepreneurship
Interactive

Michael Gut

Michael is a software architect and senior software engineer at Ergon Informatik AG. He envisions software architecture as one of the essential disciplines for crafting and building the best IT solutions for the client.
Michael's role is all about expertise in many aspects of software development and knowledge of a broad range of techniques.
He's passionate about following trends in the world of software development and is also an integral part of the companywide communities of practice network.

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HG E 21 10:15

The Bitcoin Game

We play an interactive offline group game to explore the Bitcoin ecosystem from three perspectives: technology, economics, and society.

Anyone can join, no prior knowledge of Bitcoin needed. The game originates from the D-GESS course "Shaping a DCent.Society" (spring 2023) and you will enjoy an early beta preview.

Tags

Interdisciplinary Interactive Privacy Sustainability


Luca Brilhaus


Marcus Dapp

HG E 21 13:10

Leading with Impact

To unleash your leadership potential join us in this interactive workshop. Explore "Situational Leadership" through a real-life case study and improve your communication skills by practicing the art of giving and receiving feedback.

Learn practical strategies to succeed as a tech leader and create impact in everyday team settings.

Tags

Interdisciplinary Interactive Entrepreneurship Industry trends

Eeva Tervahartiala

Iris Hunkeler

Iris is a passionate software engineer and tech consultant working at Netlight in Zurich. In the last 15 years, she has worked in multiple industries such as public administration, e-commerce and banking. She has a profound interest in how to organize and optimize teams working together.

netlight

HG D 3.1 14:00

Integrating fairness into machine learning applications

Ethics and fairness of Machine Learning applications are becoming increasingly important in the world of Data Science.

During this workshop, you will learn hands-on how to incorporate fairness metrics into your ML applications to ensure that your projects comply with ethical standards and policies.

Tags

Ethics in Computer Science
Industry trends
Interactive
Machine Learning / AI

Bernhard Vennemann

Bernhard received his Doctor of Science in 2019 and holds a M.Sc. and B.Sc. in Mechanical Engineering from the Swiss Federal Institute of Technology (ETH Zurich). Before joining D ONE as a Data Science Consultant, Bernhard worked as a University lecturer for machine learning at ETH Zurich.

Alexandros Kalimeris

Alexandros holds an M.Sc. in Data Science & Information Technologies and a B.Sc in Informatics & Telecommunications from the National and Kapodistrian University of Athens. Before joining D ONE he worked as a Data Scientist at Athena Research Center. He has significant experience in Data Science and implementation of datadriven solutions to real business problems.

Christianna Toliopoulou

Christianna holds an MSc in Business Analytics and a BSc in International Economics from AUEB. She specializes as a BI Engineer and Scrum Master with hands-on experience in product analytics and visualization as well as in delivering insights and presenting results to various levels and stakeholders. She has extended experience working in multinational environments and client facing roles.

D ONE

HG D 3.3 14:00

Create Your Own Cloud Infrastructure Like a Pro

This workshop teaches participants hands-on how to use Infrastructure-as-Code (IaC) and GitOps to provision cloud environments.

We'll create our own infrastructure on Azure via Terraform and automate the process with a GitHub Actions CI/CD pipeline.

Additionally, we'll show how we use these technologies on enterprise IT projects to create infrastructure at scale.

Basic knowledge in Git is required, learning & fun is guaranteed!

Tags

Interactive DevOps Cloud Computing Software Engineering

Florian Stelzer

Florian Stelzer is a KIT (Karlsruher Institute of Technology) Alumnus with a MSc in Electrical Engineering and Information Technology. After completing his Master, he joined ipt as a Consultant, where he started apply his experience in a mandate for swiss health insurance. In this mandate he is creating an enterprise cloud foundation. In the meantime Florian is 5x Microsoft Azure Cloud certified.

Weili Gao

Weili finished his MSc Electrical Engineering & Information Technology at ETH Zurich in 2016. Since then Weili has been working as an IT consultant, software architect & full-stack developer on IT projects in the Swiss financial services industry. His focus is on building cloud-native business applications, particularly on Azure. In his spare time, Weili likes to swim, hike, scuba dive and travel around the world.

HG E 21 15:00

How to Deal with a Cyber Crisis

Large cyber crises that cause society to grind to a halt have become a common occurrence. Tackling them requires a holistic approach: technical solutions to restoring the IT systems, political negotiations on how to help people affected by it, engineering decisions to contain the problem. No matter your background, in a cyber crisis your expertise will be useful.

We would like to offer you the chance to experience this yourself by tackling some fictional cyber crises.

Tags

Interactive Interdisciplinary

ETH Cyber Group

ETH Cyber Group is a student-run initiative at ETH Zurich which aims to bridge the gap between academia and the cybersecurity industry, and build awareness of the interconnectivity of cybersecurity across all disciplines. We strive to create a network between students, academia, industry and the public sector and facilitate discussion and collaboration for enthusiastic students that are eager to learn. Cyber Group offers a wide variety of events to ETH students: workshops, networking events, trainings, cyber strategy competitions and hands-on cybersecurity experience.

ETH CYBER GROUP
STUDENT INITIATIVE

Escape room

F33.4 | 9:45 11:45 | 12:45 14:45 | 15:00 17:00

SWITCH

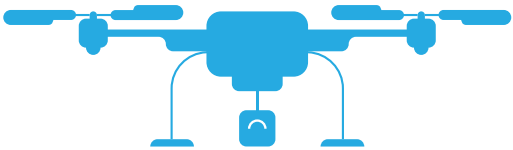
SWITCH is the competent and trusted partner for digitalisation issues that jointly concern the education, research and innovation community in Switzerland. The independent foundation helps universities and other partners within and outside the academic world to make effective and efficient use of the opportunities presented by digitalisation. SWITCH has been the registry for .ch and .li domain names since the early days of the internet. SIB partners with SWITCH's competence centre for security on the internet. SWITCH operates a multi-sector Computer Emergency Response Team providing services for universities as well as for the private sector.

Hack the Hacker - the escape room

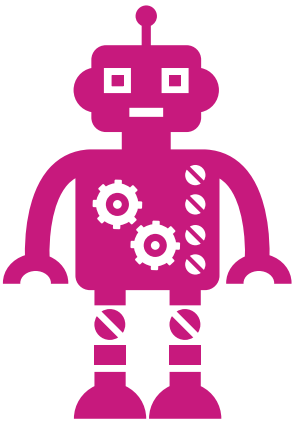
A click on a link in an email infects the computer system of your organization with ransomware. It's up to you and your team to rescue the data. The mission of your team is to find the code that revokes the encryption executed by the malicious software. Together with up to 5 people you have to search the hacker's den for hidden hints and clues.

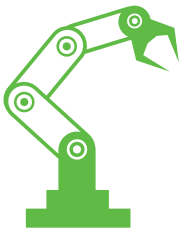
SWITCH

Exhibition



Don't forget to come by the exhibition, where you will find many exhibits ranging from super fun video games made by students, to awesome robotics projects!





Hackathon

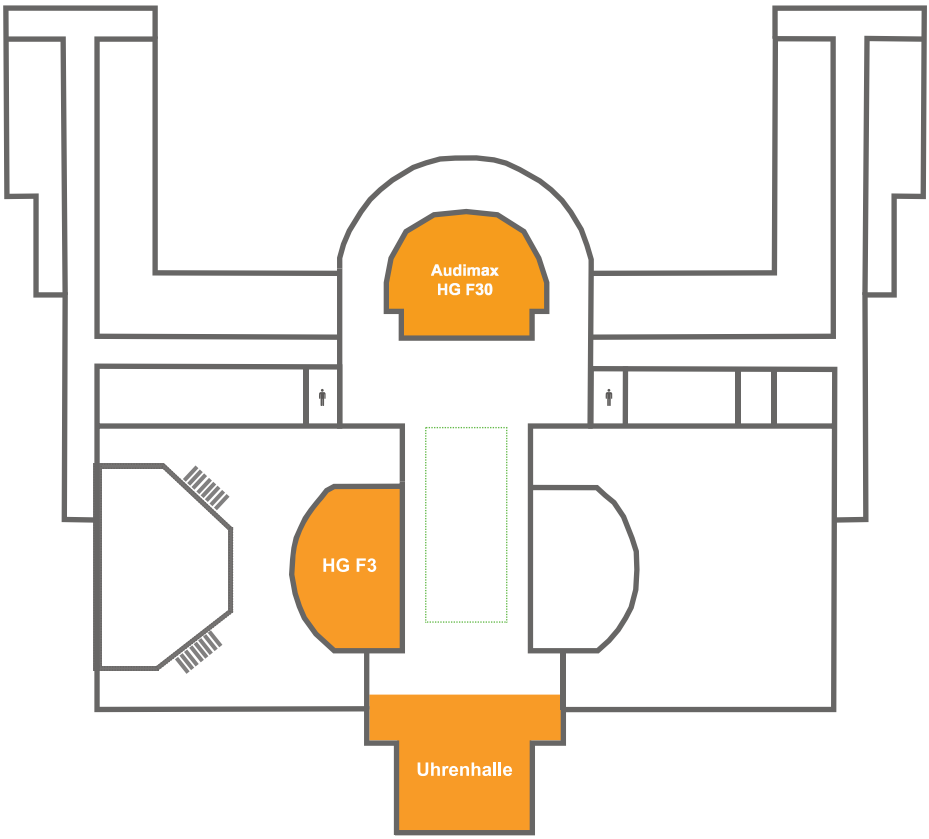
Opening Ceremony & Hackathon Start
Friday, 20.10. 15:00 - 18:00

- Welcome by VIS and D-INFK (HG F3)
- Opening speech by Daniel Zeiter from Ergon
- Presentation of the schedule and Hackathon projects
- Apéro (Uhrenhalle)
- Introduction of mentors (HG F3)
- Assigning teams with projects
- 18:00: Let the Hacking begin!

Hackathon End & Closing Ceremony
Sunday, 22.10. 13:30

- Presentation of the completed projects (HG F30)
- Closing speech by Bernhard Vennemann from D ONE
- Award ceremony
- Apéro (Uhrenhalle)

F Floor



20.10. 15:00 F3

Daniel Zeiter

Daniel has years of experience as a software engineer and is extremely passionate about technology and trends. He is now Head of Technology & IT of Ergon Informatik AG. In recent years, he has focused on DevOps and the Cloud, to name but two examples. By treating infrastructure as code, these two transformational topics enabled continuous deployment in practice . Daniel is always keen to talk shop and likes to explore the latest technologies.

ergon

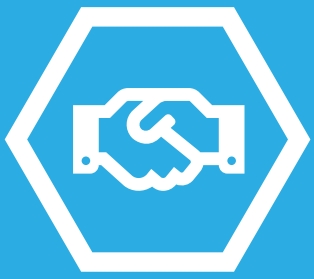
22.10. 16:30 F30

Bernhard Vennemann

Bernhard received his Doctor of Science in 2019 and holds a M.Sc. and B.Sc. in Mechanical Engineering from the Swiss Federal Institute of Technology (ETH Zurich). Before joining D ONE, Bernhard worked as a University lecturer for machine learning at ETH Zurich. Bernhard has been with the team since 2021.

D

d-one.ai



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A big THANK YOU to our sponsors! VIScon would not be a reality without you!

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ipt - Innovation Process Technology

ipt is a Swiss IT consulting company. Despite being on the market for more than 25 years, we have retained our start-up mentality: 200 people, flat hierarchy, lots of fun! We develop innovative software solutions on-site and together with our customers using leading-edge technologies. Our focus is AI & data, digital experience, cloud and integration. Our people define who we are! Employees are our backbone, and everyone can contribute.

Meet our team members Matthias Geel, Weili Gao and Florian Stelzer at VIScon 2023. They are looking forward to meeting you and sharing their experience with you. See you there!

Main-Sponsor: Ergon

Founded in 1984, Ergon is a Swiss leader in leveraging digitalisation to create unique and effective client benefits; from conception to market, which results in international distribution of globally-revered products.

In that time, we pioneered the first e-banking in Switzerland, were named the first 'authorised java centre' in Europe, built mobile applications before there were smartphones and were one of the first Swiss companies to successfully implement projects in the category Internet of Things.
We combine our extensive technological, security and business experience to design 'smart' solutions from complex requirements. Anticipating tech trends, Ergon's highly qualified experts develop and deploy user-friendly, custom software, as well as proven, off-the-shelf products, for many industries, worldwide.
Ergon now employs more than 400 members of staff and we have won several awards for our corporate culture, demonstrating our commitment to supporting future generations and our core business of software development. In 2021, we were recognised for the third time, following recognition in 2012 and 2018, as the best employer in Switzerland.

For many years, Ergon has been committed to supporting talent, as we actively encourage young people to train in the field of computer science.

Learn more about your career opportunities at Ergon and become a part of our team: www.ergon.ch/careers.

Main-Sponsor: Airlock

Airlock® delivers security-innovation technology built with state-of-the-art software engineering by Ergon Informatik. Established in 2002, we are deeply committed to advancing security innovation.

The Airlock® Secure Access Hub protects more than 30,000 applications against unauthorised access, globally, with over 20 million active identities.

The Hub is the only one of its kind in the world that provides an integrated solution composed of: Web application and API protection; Customer Identity & Access Management; and strong customer authentication.

Airlock® is a division of the preferred-employer Ergon, with a current fleet of about 70 members of staff – and growing rapidly.

We are famous for our collaborative, transparent and innovation-driven work culture, which ensures that we continuously strive to improve across the entire organisation.

VIScon is a great opportunity to connect with future generations of software engineers who have a passion for security. We look forward to sharing how an idea can evolve into a successful product and to discussing the latest security and privacy trends with you.

See you there!

Learn more about your career opportunities at Airlock and become a part of our team: www.airlock.com/jobs

Main-Sponsor:
D ONE

D ONE is the leading Swiss company for data, machine learning and artificial intelligence with national and international customers and a team of experts for data driven value creation. D ONE designs and implements projects which create value from data, acts as a guide on the journey to a data driven enterprise, and helps companies to shape processes, organizational structure, and company culture, leveraging the hands-on know-how along the entire value chain.

Co-Sponsor: Zühlke

Zühlke is a global innovation service provider. We envisage ideas and create new business models for our clients by developing services and products based on new technologies – from the initial vision through development to deployment, production, and operation. We specialise in strategy and business innovation, digital solutions, and application services – in addition to device and systems engineering. Our outstanding solutions provide unique business value and a reliable foundation for sustained success.

Co-Sponsor: BSI

Our story started in 1996. We specialize in state-of-the-art omnichannel software for customer data management and marketing automation. We are at home in Baar, Baden, Bern, Düsseldorf, Darmstadt, Hamburg, Munich, and Zurich. There are 400 of us, with more than 250 employees being part owners. No hierarchies, no org chart. We are a network and use a role concept. The same opportunities and beginning salaries for everyone. Strong values. That is who we are.

Co-Sponsor: ubique

Passion for technology combined with love for interaction design: this is Ubique. We are dedicated to meaningful digitalization, crafting exceptional digital products that simplify the everyday life of millions. How do we achieve this? With some of Switzerland's most used mobile apps, including SBB Mobile, MeteoSwiss and swisstopo. We also have our very own projects and initiatives that power the future of work, emergency response, mobility, open-source mapping and mobile authentication.

By supporting VIScon, we aim to fuel the same spirit of innovation and problem-solving that drives our work at Ubique.

Co-Sponsor: varian

Can you imagine a world without fear of cancer? We can!

It is our commitment to innovate med-tech for cancer care. Varian, a Siemens Healthineers Company, in Baden-Dättwil is a research and development center, pioneering advances in radiotherapy solutions in the fight against cancer. We are a key regional player in the high-tech sector, and the global leader in the radiotherapy business.

Our site employs more than 380 software developers, hardware engineers, computer scientists, physicists and other technical professionals united by purpose to power new victories in cancer care.

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For over 1,700 Bachelor and Master students of Computer Science, Data Science and Computational Biology and Bioinformatics at ETH Zurich, VIS is the first point of contact for events, excursions, support during their studies and university political representation towards the Department of Computer Science of the ETH.

All these services - from welcome weekends for first-semester students, through exam preparation courses for the most important exams, to the largest academic job fair for computer science in Switzerland - are organized entirely on a voluntary basis by around 200 students alongside their studies.

VIS is part of the VSETH, the umbrella organization of all student organizations at ETH representing more than 20,000 students towards the university in terms of university politics and, like VIS, is omnipresent in student life outside the lecture halls.

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