VIScon 2024

Program 12.10.2024

Welcome to VIScon 2024

New Year! New VIScon! And this one will be better than ever!

Do you want to enjoy a relaxing day, listening to interesting talks? Join the 25 captivating talks, take a stroll through the exhibition, and enjoy the free coffee.

You also want hands-on experience or action and adventure? Don't worry, we got you covered! Join one (or more ;)) of the 14 exciting workshops or 3 thrilling escape rooms, and visit the amazing hands-on student projects of this year's exhibition.

This is still not enough excitement? Then you're in luck! The first time in VIScon history, we are working with the CPC to organize two, yes you heard me right, two 2 hour competitive programming competitions each with prizes up to 125 CHF.

As the cherry on top, all of this is accompanied by free food and drinks all day long! Meat, Vegan, cold drinks and coffee, we got your back, no matter your taste buds.

We will bring the event to a close with the grand finale, a delectable apéro for you and your friends to process all the amazing impressions of the day.

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

Niklas Tischler
Head of Symposium

VIS con

SYMPOSIUM
HACKATHON

9:30-10:00 — Audimax F 30
Opening Ceremony and Breakfast

10:15-11:00 — E 1.1
User enumeration based profiling
Share the platforms you're on and I'll predict your identity!
Mario Bischof, Infoguard

10:15-11:00 — E 1.2
Why software development has not (yet) moved to low-cost countries
Noah Heusser, Ergon

10:15-11:00 — E 3
Kirsch: an Operating System for Real Computers
Timothy Roscoe, ETH Zürich

10:15-11:00 — E 5
Transitioning from University to a Career in Industry
Pavani V and Giulia Rumi, Google

11:15-11:35 — E 1.1
New Work- a culture clash
Annika Geissler, Cyberfy

11:15-12:00 — E 1.2
Mutants to the rescue
How effective are your unit tests?
Paco Emiel van Beckhoven, Leica Hexagon

11:15-12:15 — E 3
How to make Formula 1 drivers obsolete
AMZ Racing

11:15-12:15 — E 5
Beyond zeros and ones
Analog computing in the 21st century
Prof. Dr. Bernd Ulmann, Anabrid

13:00-13:45 — E 1.1
How misused plug-and-play technology can disrupt societies
The flip side of dual-use innovation
Fabian Kosider and Léo Alvarez, Deloitte

13:00-13:45 — E 1.2
Empowering Developers
Building an Application Catalogue with Crossplane
Aarno Aukia, VSHN

13:00-13:20 — E 3
How I Hacked the SBB
Lucas Brunner, D ONE

13:30-13:50 — E 3
What do consultants even do?
Léon Hinderling, Cyberfy

13:00-13:45 — E 5
Crisis Management 101
What to do when shit hits the fan
Yves Hersener, Migros

14:00-14:45 — E 1.1
Software development
Wonderfully unacademic
Noah Heusser, Ergon

14:00-14:45 — E 1.2
From Lab to Treatment
Integrating State-of-the-art research into Cutting-Edge Adaptive Radiotherapy
Agnieszka Pazdan, Varian

14:00-15:00 — E 3
A smooth introduction to deterministic quantum physics
Playing games against the universe
Ghislain Fourny, ETH Zürich

14:00-15:00 — E 5
How to discover CPU vulnerabilities
The journey to Inception and beyond
Kaveh Razavi and Johannes Wikner, ETH Zürich

15:15-16:00 — E 1.1
Rethinking Social Media
Alexander Pitsch, FSFE

15:15-16:00 — E 1.2
A next generation of high performance controllers
David Blaser, Indel

15:15-16:00 — E 3
Breaking and Entering
Why Social Engineering Attacks Work and How To Defend Against Them
Julia Badertscher, Compass Security

15:15-16:00 — E 5
Talk to your code
LMs Made Practical
Sophie Vanderspar, Google

16:15-17:00 — E 1.1
Capabilities all the way down
A resilient OS for critical infrastructure and IIoT
Sid Hussmann, Gapfruit

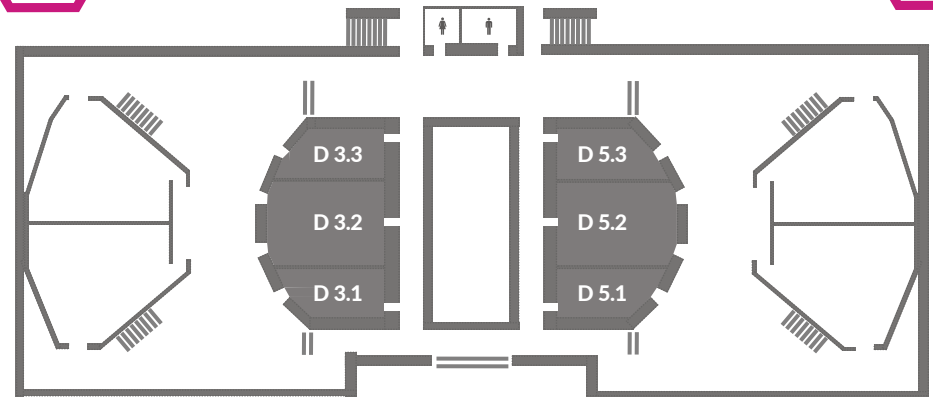
16:15-17:00 — E 1.2
Mastering the Unseen Forces
Writing fast and dependable trading platforms in C++
Moncef Mechri, DRW

16:15-17:00 — E 3
A year in AI
The fsued news show
Max Schrimpf, Cyberfy
Nicolas Klose, ETH Zürich

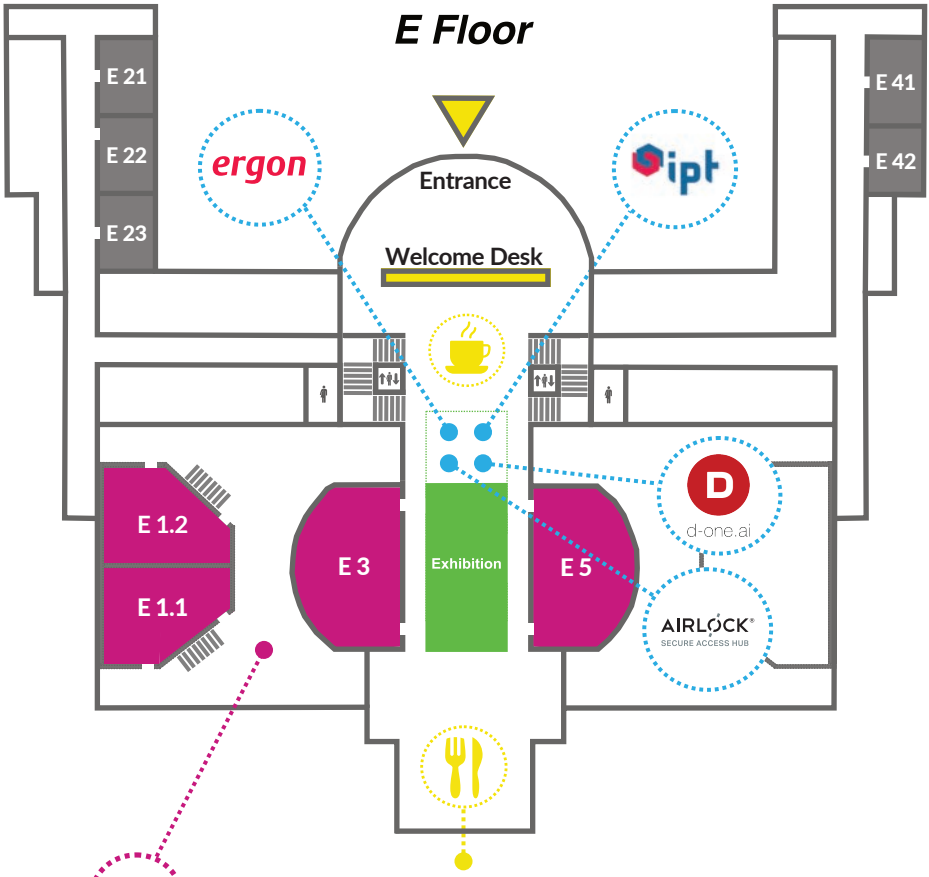
16:15-17:00 — E 5
What We Can Learn From P@ssword! Leaks
Sandro Affentranger, Oneconsult

17:05-17:30 — Audimax F 30
Closing Ceremony and Apéro

D Floor

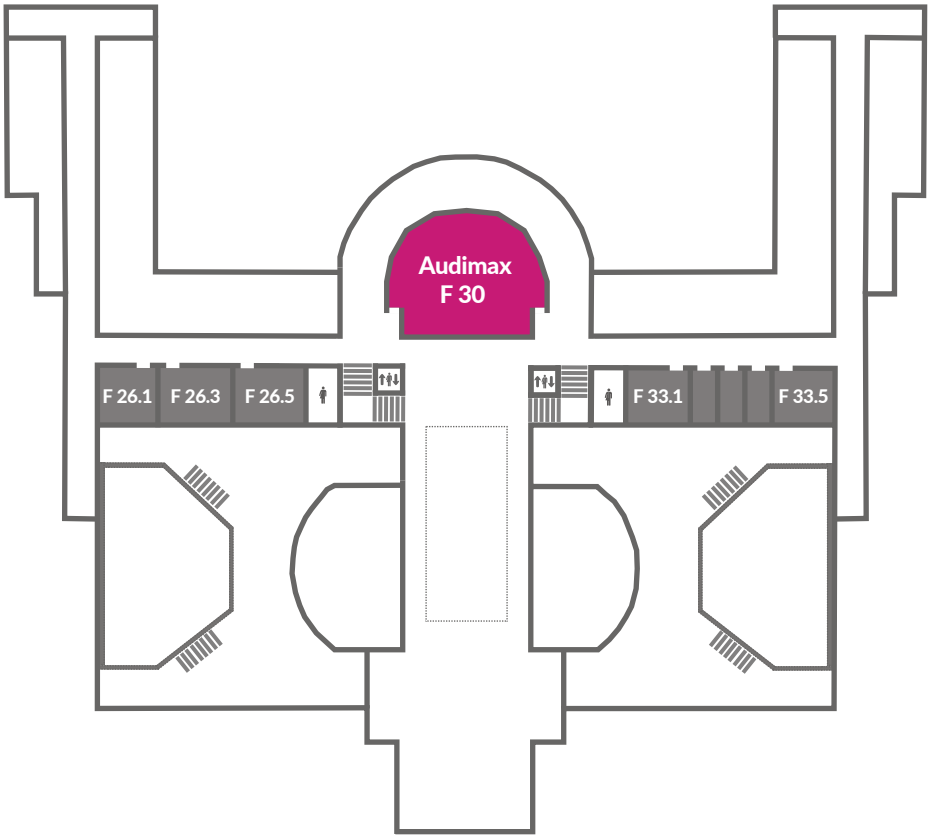


E Floor



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

F Floor



Get a drink from one of the fridges or grab a coffee.

Grab lunch from one of the foodtrucks outside.

Food

Breakfast

9:00 - 9:30

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

Lunch

11:30 - 13:30

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

There are two foodtrucks outside on Polyterrasse!

Please be prepared to show your badge to our helpers when picking up your food.

Apéro

17:20 - 18:00

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 F floor).

Opening Speech: Yves Brise

Yves is an ETH Alumnus and Partner at ipt AG. He received his PhD in Prof. Dr. Emo Welzl's group of Combinatorial Algorithms working on quadratic optimization problems and generalisations thereof. After finishing his PhD in 2012, he went to work for the Swiss based IT service provider ipt in the private sector. He has been working as a consultant for large Swiss companies such as SBB, Swisscom, Helsana, Helvetia, Postfinance. His main area of work is bringing AI- and data-driven decisions to those enterprises.

Talks

E 1.1 10:15

User enumeration based profiling

InfoGuard SWISS CYBER SECURITY

Share the platforms you're on and I'll predict your identity!

We present a user enumeration based OSINT method for profiling online individuals using models trained on a small dataset. To collect data from 111 webapps for 400 subjects, we developed our own toolset.

The prediction of personal attributes of an arbitrary e-mail owner is demonstrated on the example of gender identification. Depending on what is predicted, the security risk may vary greatly and our findings suggest that more complex profiles mainly depend on size and richness of the dataset.

Mario Bischof

Mario Bischof has many years of experience as a programmer, lecturer and penetration tester. Over the last decade, he has specialized in the field of IT security and currently works as a penetration tester in the RedTeam of InfoGuard AG.

InfoGuard

E 1.2 10:15

Why software development has not (yet) moved to low-cost countries

ergon smart people – smart software®

The option to outsource IT to low-cost countries is there, so why do companies prefer to keep it in-house or local?

The reality is that few businesses have taken the leap of faith to set up teams abroad despite the war for talent in high-cost countries and the comparative surfeit of IT pros in low-cost ones.

Why is this? Find out as we explore the reasons why companies remain hesitant (spoiler: it's not just a communication impasse) and the nuances and complexities associated with keeping your IT team in your country.

Noah Heusser

Noah's passion for data led him to complete an IT apprenticeship, a Bachelor's from FH OST, and a Master's from ETH Zurich. At Ergon, he solves complex problems, develops software, and manages projects. He also lectures at a university, sharing his IT knowledge and passion with future professionals.

Ergon

Kirsch: an Operating System for Real Computers

E 3 10:15

Kirsch is a new operating system being written in the Systems Group at ETH Zurich to address the current dumpster fire of hardware complexity and hardware security flaws in current SoC and server platforms.

Rather than a clean-slate design, Kirsch acknowledges the need to build a secure OS for a complete machine out of both trusted and untrusted parts, accommodating the proprietary firmware on some devices.

Kirsch assembles an OS for a real computer out of components which have explicit, formally-specified trust relationships based on the hardware.

Timothy Roscoe (Mothy)

Timothy Roscoe is a Full Professor in the Systems Group of the Computer Science Department of ETH Zurich.

Read more

Transitioning from University to a Career in Industry

Google

E 5 10:15

Transitioning from student to a professional for the first time can be intimidating. Join our talk if you'd like to learn some tips on how to navigate the first steps of a successful career.

We'll cover topics like what to expect, networking, mentorship, allyship and imposter syndrome.

Giulia Rumi

Giulia Rumi is a Senior Site Reliability Engineer at Google in Zurich, where she applies her deep understanding of datacenter operations to maintain the availability of Google's services.

Pavani V

Pavani has 15 years of experience in the Computer Science industry, including a decade in Silicon Valley. She is currently a Senior Technical Program Manager at Google and has previously worked as a Data Scientist and Software Engineer.

Google

E 1.1 11:15

Annika Geissler

Annika is a Manager and Co-Founder of Cyberfy Consulting, specializing in Cloud and Modern Workplace solutions. With over five years of IT consulting experience, particularly in the Modern Workplace, Annika brings a wealth of knowledge and expertise to her role.

Cyberfy

New Work- a culture clash

What companies do, and what young employees expect…

In this talk, we'll delve into the shifts in culture and digitalization that have shaped the last decades. New work is neither the clichés of fancy offices or just remote work; it's about unleashing human potential and embracing new values. Drawing from over 5 years of consulting experience, I'll shed light on:

-The clash of work cultures across generations and industries
-Digital workplaces: What to expect in terms of digitalization
-Company values in the era of New Work"
-Trends and the "must haves" of a New Work culture

E 1.2 11:15

Paco Emiel van Beckhoven

Paco is a passionate software engineer who likes to challenge the world and the software around him. He's a software engineer at Hexagon where his main focus is to improve the development process. He regularly speaks at conferences to entertain and educate visitors on various topics with a focus on software quality.

Leica

Mutants to the rescue: How effective are your unit tests?

We write tests to tackle bugs, verify functionality, and ease maintenance. Using code coverage as our metric, we might deem ourselves safe and our tests flawless. But how can we be sure our tests are okay? Tests covering code don't guarantee it works correctly. A missing assertion can open the door to numerous bugs.

In this talk, we'll explore mutation testing. By generating mutants—faulty versions of your code—we measure how well tests detect bugs. We'll cover mutation tools, how they work, getting started, integrating them into your builds, and when to consider them.

How to make Formula 1 drivers obsolete

E 3 11:15

Autonomous driving is one of the flashiest promises of technology, allowing individual transport to be more relaxing, efficient and safe.

Racing series as the indy autonomous challenge raise the question, what is the current limit of autonomous racing and how does it compare to a real human driver?

We are spotlighting the autonomous driving problem from our student project perspective.

AMZ Racing

AMZ Racing is a student project, building a new prototype race car every year as part of the Fokus-Projectcycle of the D-Mavt departement. Additionally, since 2016, we develop a driverless pipeline every year that makes the car race autonomously. The goal is to participate in the yearly Formula Studentcompetitions, the biggest engineering competition for students worldwide.

AMZ

Beyond zeros and ones - analog computing in the 21st century

E 5 11:15

With digital computers hitting basic physical boundaries, unconventional approaches to computing are getting more and more attention.

This talk gives an introduction to analog and hybrid computing and shows how these paradigms will change computing as such in the following years and decades.

Prof. Dr. Bernd Ulmann

Studied mathematics and philosophy at university Mainz, Ph.D. about analog computing at university Hamburg. Professor for business informatics at FOM Frankfurt. Co-founder and analog evangelist at anabrid GmbH. Collects and restores analog computers.

Read more

E 1.1 13:00

Fabian Kosider

Fabian is an Assistant Manager in Cyber Resilience within Deloitte's Risk Advisory practice in Zurich. He brings a wealth of experience in dealing with strategy and cyber security issues. His experience has been gained in the financial, government and various industrial sectors, as well as in the field of cyber innovation.

Léo Alvarez

Deloitte

How misused plug-and-play technology can disrupt societies

Deloitte.

The flip side of dual-use innovation

The accessibility of powerful cyber technologies has transformed digital security and privacy. Once the exclusive domain of nation states and elite hackers, these technologies are now available as off-the-shelf products, some as plug-and-play devices.

These dual-use devices expand the playground for malicious actors. They require minimal technical expertise and have the potential for malicious use. This presentation will explore the threats they pose and their impact on society and people's lives.

E 1.2 13:00

Aarno Aukia

Aarno finished his MSc CompSci ETH in 2009 and has been in operations and cloud engineering ever since. Co-founding VSHN—The DevOps Company in 2014, the company has grown to 50 VSHNeers with offices in Zürich, Switzerland, and Vancouver, Canada.

Crossplane

Empowering Developers: Building an Application Catalogue with Crossplane

Crossplane

This session features a technical demo that will help you discover how platform engineering innovations are revolutionizing internal developer platforms. Join us to explore how Crossplane enables seamless application catalog construction, empowering teams to streamline development workflows and accelerate innovation. Crossplane is an open-source CNCF project built on the foundation of Kubernetes to orchestrate anything. Encapsulate policies, permissions, and other guardrails behind a custom Kubernetes API line to enable your customers to self-service without them needing to become infrastructure experts.

How I Hacked the SBB

A Story About Architectural Design Flaws

D ONE

If you keep your eyes open, you'll notice many things don't add up. How do you exploit design choices in application architectures? Are you honest and follow disclosure guidelines? Join me as I uncover public connection details and explore what can be done with seemingly harmless data.

E 3 13:00

Lucas Brunner

Lucas holds an M.Sc. and B.Sc. in Computer Science from ETH Zurich, specializing in Machine Learning, Reinforcement Learning, and Distributed Computing. Lucas works at D ONE as a GenAI & Data Analytics Consultant, focusing on developing a variety of different LLM applications for their clients.

What do consultants even do?

cyberfy consulting

A day in the life of an IT Consultant.

We'll dive into the Good, the Bad and the Ugly of the consulting world and hopefully destigmatize 'Fake it till you make it', the buzzworld culture and help you thrive in such an environment. After all there are no shortcuts to becoming Hokage!

E 3 13:30

Léon Hinderling

Léon is a consultant with a background in Mechanical Engineering. Following his time on the AMIV board and a successful time as a Data Engineer at Accenture, Léon transitioned to his current role as a Cloud Consultant at Cyberfy.

Crisis Management 101

What to do when shit hits the fan.

MIGROS SECURITY & RISK

Emergency and crisis management are becoming more and more important to mitigate the impact of outages.

In this talk you will learn the basics of emergency and crisis management which you might be able to not only use in a company setting but also for your private life.

TL:DR: What do you do if shit hits the fan and how to get your clients to not notice it.

E 5 13:00

Yves Hersener

IT-Security Consultant at Migros-Genossenschafts-Bund.

Migros

Data Science - VIS Alumni - Privacy - Interdisciplinary - Industry trends - Interdisciplinary - Security - Interdisciplinary - Security - Security

E 1.1 14:00

Software development: wonderfully unacademic

ergon
smart people – smart software®

Noah Heusser

Noah's passion for data led him to complete an IT apprenticeship, a Bachelor's from FH OST, and a Master's from ETH Zurich. At Ergon, he solves complex problems, develops software, and manages projects. He also lectures at a university, sharing his IT knowledge and passion with future professionals.

In my journey as a software developer, I have experienced firsthand the stark contrast between academic theory and practical application. Drawing from my many years in this field, I reveal the realities of software development, emphasising the critical role of effective communication with clients.

Together, we will delve into how theoretical concepts are implemented within and tailored to real-world situations – and how they can be rejected altogether if necessary. Prepare for an honest examination of the challenges and achievements that mark the day-to-day lives of developers.

Ergon

E 1.2 14:00

From Lab to Treatment

varian
A Siemens Healthineers Company

Agnieszka Pazdan

Agnieszka Pazdan is an experienced professional with a Master of Science in Telecommunication. Since joining Varian in 2015, she has been working in various projects related to Proton Therapy Imaging and Treatment Management and Planning.

Mário João Fartaria

Mário has a background in biomedical engineering and holds a PhD from the Université de Lausanne. He joined Varian in 2020 as a Project Manager. Recently, he became the Portfolio Manager for the TPMS Technology department.

Integrating State-of-the-art research into Cutting-Edge Adaptive Radiotherapy

Fast, precise, and personalized treatment are key in adaptive radiotherapy, enhancing cancer care. Besides sophisticated hardware, advanced algorithms play a crucial role. These algorithms, inspired by research from students and researchers, require multiple tasks and teamwork from research to user-ready products.

This presentation overviews Ethos, Varian's adaptive radiotherapy solution, from patient intake to treatment completion, highlighting the integration of advanced algorithms from research to clinical practice.

Varian

A smooth introduction to deterministic quantum physics

ETH zürich

E 3 14:00

Playing games against the universe

Last year, I introduced the game interpretation of quantum physics and Einstein's view of its incompleteness.

This year, I will show in more details the relationship between game theory, nonlocality, contextuality, causality and correlations, and between Bell inequalities and mixed strategies.

I will give a status report on latest results and related work. I will end with a few comments on the philosophical implications that this approach has about our view of the universe.

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.

Read more

How to discover CPU vulnerabilities

ETH zürich

E 5 14:00

The journey to Inception and beyond

We have entered a new paradigm of computer security, where hackers exploit speculative execution flaws of modern processors to compromise the confidentiality of bug-free computer systems.

Last year, we found a new speculative execution vulnerability called Inception, which bypasses all previous mitigations thanks to some interesting previously-unconsidered branch predictor behaviors, namely Phantom Speculation and Training in Transient Execution (TTE). We give a demo and discuss our research.

Kaveh Razavi

Kaveh Razavi is a former hacker and current security professor at ETH Zurich.

Johannes Wikner

Johannes Wikner is a 4th year PhD student at the COMSEC group in ETH Zurich and researches branch prediction, primarily on x86 processors.

Read more

E 1.1 15:15

Alexander Pitsch
HSG graduate turned software engineer. FLOSS & Commons enthusiast. Digital rights activist.

FSFE

Rethinking Social Media

Social media - in their current form - are toxic. Instead of connecting people, they have become tools for disinformation, distraction, and divisiveness.

Can we imagine a less harmful form of social media? If yes, how would it look like? And what role does free software play in this alternative?

E 1.2 15:15

David Blaser

David completed his Computer Science Master at ETH. During his studies he volunteered for VIS/VSETH in a large variety of roles, including being on the organisational committee of VISCON for four years. About 1.5 years ago he joined Indel AG as software engineer.

GIN-PCIe5

A next generation of high performance controllers

INDEL

Embedded software aspects

Get ready for an exiting synopsis of a software engineer's view on the launch of a next generation CPU-Board, the GIN-PCIe5. This novel machine controller features a Quad-Core ARM CPU and 8 GB RAM.

David will present the journey of a small software team that ported and tested an RTOS for new hardware.

Along the way you will experience practical challenges of software engineering for embedded systems. These technical matters will be spiced up with anecdotes that hopefully make you smile.

Breaking and Entering

Why Social Engineering Attacks Work and How To Defend Against Them

E 3 15:15

Why go through the efforts of hacking a coporation remotely, if you can just walk in the door? Based on examples of physical penetration tests conducted in Switzerland, this talk will give insight into how social engineering attacks are planned and executed.

We will look at the flaws in the human operating system which make such attacks possible in the first place and develop patches to defend against them.

Julia Badertscher

Julia started her professional carreer as a a Cyber Security Consultant, putting the communication skills she learned during her time as a VIS-Board member (External Relations) to good use. However, she has since circled circled back to the more technical challenges of Cyber Security: Working as a Security Analyst at Compass Security AG, she now attempts to hack her customers to improve their security stance; and occationally she breaks into buildings.

Compass Security

Talk to your code: LMs Made Practical

E 5 15:15

Large Language Models (LLMs) offer remarkable capabilities, and they're surprisingly simple to use with a bit of Python know-how. This talk dives into LLMs, their fundamentals, and the techniques that can significantly improve your results.

We'll address the complexities of LLM training data, discover powerful techniques for optimizing LLM output and explore cutting-edge multimodal applications like object detection. See how Google applies these models in innovative projects in Geo3D.

Sophie Vanderspar

Data Scientist at Google Geo3D. Sophie moved from the UK to Zurich to pursue a MSc in Energy Science and Technology from ETH Zurich. Her passion lies in making complex things run better, and now she is applying that expertise to shaping the future of 3D information.

Google

E 1.1 16:15

Capabilities all the way down

gapfruit

A resilient OS for critical infrastructure and IIoT

Sid Hussmann

CTO & Founder of Gapfruit

The WebAssembly System Interface (WASI) has two powerful security principles: Strong isolation and control over dependencies using capability-based security.

In my talk, I demonstrate how to build resilient systems with this approach all the way down to the hardware and reduce the overall attack surface by over 99%.

Read more

E 1.2 16:15

Mastering the Unseen Forces: Writing fast and dependable trading platforms in C++

DRW

Moncef Mechri

Moncef Mechri is a developer at global trading firm DRW, building the core low-latency trading platforms used throughout the company. He is passionate about writing fast and robust code.

Trading systems navigate a complex terrain of seemingly conflicting demands. They must swiftly seize market opportunities, handle large data volumes without delay, adapt across diverse exchanges, empower users to capitalize on unique market offerings, and rapidly evolve while preventing costly errors.

In a talk at the intersection of trading, computer architecture, and software engineering, Moncef Mechri will unveil the technological challenges in automated trading, and how strategic utilization of C++ can help overcome them.

DRW

A year in AI

cyberfy consulting

E 3 16:15

The fsued news show

Nick & Max both read too much AI news. They claim it is because their work as a researcher and a consultant touches on the topic regularly, but secretly they mostly just think it is interesting.

To further justify their obsession, they have decided to summarize the last year of AI, providing you with an update that will bring you up to speed on everything you need to know (and some things you don't), including new models, the funniest fails, new capabilities and of course Nvidias stock price.

Nicolas Klose

Nicolas Klose is pursuing a Ph.D. in the Programming Methodology group. His research focuses on the inference of specifications for program verification, both with classicalmethods and ML.

Max Schrimpf

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

Cyberfy

What We Can Learn From P@ssw0rd! Leaks

oneconsult

E 5 16:15

Data leaks are almost a daily occurrence. This often includes passwords. Fortunately, these days they are often stored as hashes rather than in clear text. But even then, it is only a matter of time before a large proportion of these passwords are guessed.

In this talk, we will analyse password leaks to find out how users choose their passwords and identify common patterns they use. The goal is not only to make our own passwords stronger, but also to help others to choose better passwords.

Sandro Affentranger

After completing his MSc in Computer Science at ETH in 2017, Sandro joined Oneconsult AG as a penetration tester. As part of Oneconsult's attack simulation team, he plays the role of an attacker, trying to penetrate and compromise clients' networks. In the process, he has developed a passion for password cracking.

Oneconsult

Apply to succeed

Ergon

Apply to succeed in the world of software engineering

Ready to turn your job application into a dream position? Join Bianca and Alexandra as they teach you the tricks to landing the job you have always wanted to have. What details do you need to include in the perfect application? What pitfalls should you look out for? What surprises have our experts encountered in their time? All these questions and more will be answered during the session. We cannot wait to see you there!

Escape room

SWITCH

Switch is paving the way to a secure digital future for Swiss universities. We work closely with universities to co-create digital solutions that are specifically tailored to their needs. Our focus is on strengthening cyber security, the universal use of digital identities and the trustworthy handling of sensitive data in the cloud. As a non-profit foundation, we operate independently of commercial interests. Today, Switch is a leading digitalisation partner for the university community. Our aim is to sustainably strengthening Switzerland's digital competitiveness in the interests of society. Since the early days of the Internet, we have also been responsible for the operation and protection of domain names ending in .ch and .li. Thanks to Switch, Switzerland enjoys a secure and stable Internet.

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.

Competitive Programming

CPC

The Competitive Programming Committee shares a passion for problem-solving and algorithmic puzzles. They participate in ICPC and Helvetic Coding Contest, and try to beat all others with their skills. They meet weekly at CAB to discuss competitive programming puzzles and organize a contest once each semester.

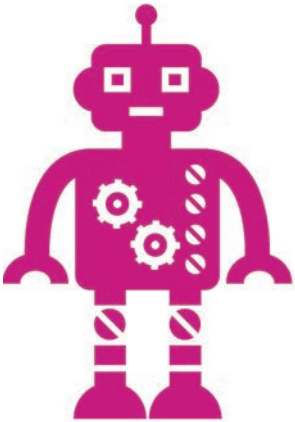
Competitive Programming Contest

Join our Competitive Programming Contest! Start with a quick 5-minute intro and a 25-minute practice session, then dive into 2 hours of coding. Tackle 5-6 algorithmic puzzles, just like in your Code Expert tasks. Compete solo on Codeforces, using over 30 languages, including C++, Java, and Python. Use any tools like ChatGPT, but no talking to others. Track your progress on the live scoreboard, with final results announced at the Closing Ceremony. Bring your laptop and showcase your skills!

Exhibition

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

The exhibition opens at noon.



Workshops

The Bitcoin Society Game by Orangepeace

Is Bitcoin more than better money - or not even that?

Discover Bitcoin like never before! We play an interactive offline group game to explore the Bitcoin ecosystem from various angles: economics, technology, sustainability, and society.

Anyone can join, no prior knowledge of Bitcoin needed. You will enjoy a sneak-peak into the latest version of the game.

F 26.5 09:55

Marcus Dapp

Founder www.orangepeace.org, a non-profit to research and educate for a Bitcoin Economy. ETHZ lecturer for 21 years, currently: "DCentSociety": societal implications of Bitcoin/crypto. Received D-GESS Golden Owl 2012. Before: Head of Research, Bitcoin Suisse.

Luca Brilhaus

Read more

How to Deal with a Cyber Crisis

Experience what the Cyber 9/12 Strategy Challenge is like!

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.

E 42 10:15

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

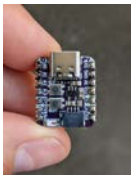
D 3.3 10:15

@tamberg

Thomas Amberg is a software engineer and maker, professor of IoT at FHNW, founder of Yaler.net and organiser of the IoT Zürich Meetup.

Workshop

IoT Embedded Programming with CircuitPython



The easiest way to program microcontrollers

CircuitPython is the easiest way to program microcontrollers". If you use Arduino or know a little bit of Python, consider joining this mini workshop.

Bring a laptop with USB, any OS. Get from blink to IoT in 1.5 hours. We'll provide 10 kits to be shared — open hardware, software and materials :)

D 5.1 10:15

Christoph Maurhofer

Christoph joined the Android Team at Ubique in 2017 during his master studies at ETH Zurich. He is enthusiastic about computer graphics and specializes in C++ Android development, rendering with OpenGL, and maps.

Alexander Friedrich

Alexander finished his MSc Computer Science at KIT Karlsruhe in 2018. Since 2019 he has been developing Android applications at Ubique. He specialises in Kotlin Multiplatform, mobility and weather apps.

Ubique

Maps on Android with Open Swiss Maps - Workshop with Ubique

ubique

This workshop is aimed at anyone who is interested in creating an app which contains a map. We will introduce you to basic concepts and techniques which are required for displaying an interactive map.

Together, we will develop a simple Android app, which displays geodata on a map.

Participants should have a computer and basic knowledge of Android Studio and Kotlin to participate in this workshop. We look forward to providing you with an insight into the world of maps.

Solving streaming problems in real-time

Play around with Apache Flink to create value out of an air quality sensor

D ONE

D 5.3 10:15

Ever wanted to play around with the tools that detect credit card fraud in real time? Or make new recommendations on which video to watch next? Or that can notify you when to open the window because the C02 values are too high?

If so, come to this workshop and find out (where we will be working on the latest problem).

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

Tuning Up: A Hands-On Guide to Creating Your Own Custom LLM

How to build a custom LLM by fine-tuning open source foundational models

D ONE

E 22 10:15

The advent of large language models, exemplified by ChatGPT, has transformed the industry, showcasing diverse applications. Yet there remains a demand for customized LLM solutions. In this workshop, you will learn to craft your own custom LLM. Leveraging an open-source foundational model as the bedrock, we'll guide you to fine-tune it with your own unique data set. This personalized approach ensures your LLM aligns effectively with your specific requirements and objectives.

Philipp Thomann

Philipp is a Managing Consultant at D ONE since 2017. Before he received a PhD in Mathematics from the University of Zurich in 2013 and served afterwards as a postdoctoral researcher at the University of Stuttgart, Germany.

Shams Taha

Shams Taha is a Cloud Engineering Consultant at D ONE in Zürich. With a solid foundation in cloud and data engineering, she has built applications using large language models and designed effective data migration solutions on AWS.

Bernhard Vennemann

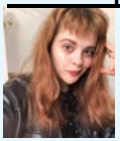
Bernhard received his Doctor of Science in 2019 and holds a M.Sc. and B.Sc. in Mechanical Engineering from ETH Zurich. Before joining D ONE as a Data Science Consultant, Bernhard worked as a University lecturer for machine learning at ETH Zurich.

D 5.3 12:45

Jhony

Full Stack Software Engineer, specializing in front-end development with React and Typescript.

Anna Kiepura



I'm a PhD student in NLP for scientific documents processing at ETH Zurich.

Jessica Lam

Jessica Lam is a PhD student at ETH Zurich working on Natural Language Processing in scientific texts, committed to developing new ways to navigate the growing literature quickly and smartly.

Boosting literature review with NLP-powered APIs

The advent of Large Language Models has inspired many to create applications based on Natural Language Processing (NLP). For budding NLP developers, our team offers a fun playground: Endoc, our proprietary platform for scientific discovery and writing that is powered by NLP Application Programming Interfaces (APIs).

Workshop participants will work on Cited Text Retrieval, a meaningful yet understudied problem with reading scientific papers, and implement solutions in the form of APIs for Endoc.

E 42 12:45

Reto Ischi

Reto is head of product development for Airlock Secure Access Hub at Ergon and lecturer for web security at FH OST. Passionate about IT security for over 25 years, Reto Ischi has dedicated his career to making the web more secure.

Alexander Born

Alex is a Senior Data Scientist at Airlock, working in the dynamic field of anomaly detection. After nearly a decade of project experience in management consulting, with a focus on Data Science and AI, Alex decided to return to academia, which led him first to ETH and then to Ergon.

Airlock

Guardians of the web: a practical security workshop

AIRLOCK® SECURE ACCESS HUB

Join us as we explore the fast-evolving world of web security. In this hands-on session, participants will take turns playing the role of security engineers and attackers. As an engineer, you will learn how to identify and mitigate web threats, while being an attacker will help you understand the strategies they use and how to defend against them.

Our workshop not only offers theoretical knowledge but also provides hands-on experiences in a lab setting. You'll receive explanations and have the opportunity to try things out together with a group of other participants.

Introduction to Kubernetes

Unlocking the Power of Container Orchestration

According to CNCF, 96% of the world's larger organizations are either using or evaluating Kubernetes. This is a trend you don't want to miss!

After our workshop, participants are able to understand the basics of Kubernetes and can deploy applications.

D 5.1 13:00

Cornelius Schaub

Cornelius Schaub is an IT consultant from Germany with an MSc in Computer Science. He joined the IPT team one year ago. During his studies, Cornelius focused on distributed systems, especially cloud-native technologies.

Benjamin Bürgisser

Benjamin Bürgisser is a UZH alumnus with an MSc in Computer Science and is a former member of the ETH Game Technology Center. After joining ipt in 2018, his work included enterprise integration, cloud services, IAM, test automation, and business process automation.

IPT

Extend C++ with GCC Plugins

E 22 13:00

Javier Perez

Javier has received a Bachelors is in Electronics Engineering and an MPhil in CS from the University of Cambridge, where he worked on Programming Languages with the Modular Macros team. His interests have long been low level software, compilers, and performance, joining an embedded team at Apple and then DRW following his undergrad.

C++ has many features but sometimes we want more. GCC has a little-known ability for users to add their own compiler features. This has some of the benefits of custom code generation without extra build steps or other downsides like having to maintain a custom build of the compiler.

We will present one GCC plugin we use in production and explain how it helps us achieve high runtime performance without waiting for the next release of GCC which incorporates our enhancement natively. We will then guide workshop participants to create their very own C++ extensions such as custom attributes.

DRW

D 3.3 13:00

Prof. Dr. Bernd Ulmann

Studied mathematics and philosophy at university Mainz, Ph.D. about analog computing at university Hamburg. Professor for business informatics at FOM Frankfurt. Co-founder and analog evangelist at anabrid GmbH. Collects and restores analog computers.

Read more

Hands on analog computing

anabrid

Fun with differential equations

Get hands on experience in programming analog computers. Using THE ANALOG THING we will explore analog computer programming with examples ranging from the simple to rather complex ones such as chaotic attractors or the simulation of an epidemic.

F 26.5 14:00

Ivano Somaini

Ivano Somaini completed his Master's degree in IT Security at ETH Zurich in 2011. He's been with Compass Security ever since. He was trained as an Advanced Social Engineer by Christopher Hadnagy, one of the world's best social engineers. A year later he trained in Open Source Intelligence with Michael Bazzell, the former FBI undercover agent and recognised OSINT expert.

Elisa Nannini

Roman Schneider

OSINT Workshop

Following the digital bread crumbs

Open Source Intelligence (OSINT) tips and tricks criminals don't want you to know.

Experience hands-on open source tactics and techniques to gain more information than the one visible on the surface. Train your mindset and dive with us in the ocean of online information.

For this, it doesn't matter if you are already a Sherlock Holmes or a Watson - Everybody is invited to participate!

Complex decision-making made simple

ergon
smart people – smart software®

D 5.3 15:30

Decisions are big business – and the people who make them are essential. Transitions, policy shifts and pivots: This workshop delves deep into the fundamentals of decision-making and equips you with the best tools to overcome complexity in an organisation.

Key relationships, bottlenecks, feedback loops: Everything is covered in this session, giving you the knowledge to make decisions in a range of environments. From simulation models to data validation, we will show you exactly how your decisions can have a butterfly effect in an organisation.

Francisco Ribera

Born in Bolivia, Francisco studied software engineering at UPSA and participated in the ACM-ICPC world finals in Morocco in 2015. Passionate about programming challenges, he moved to Switzerland in 2016 for a master's at ZHAW, specializing in computer vision for object detection and segmentation. He completed his thesis on computer vision with reinforcement learning using voxels in Unity. Francisco now works as an engineer at Ergon Informatik, exploring new technologies and problem-solving techniques.

Ergon

DataScience with Spatial Computing

Explore your data in Augmented and Virtual Reality using PlotAR

D ONE

E 42 15:30

Did you ever dream about fully immersing yourself in your data, walking through it, grasping it with your hands?

Learn with some hands-on exercises the basics of PlotAR. You will be able to try it out on your Smartphone and on VR-Headsets.

Philipp Thomann

Philipp is a Managing Consultant at D ONE since 2017. Before he received a PhD in Mathematics from the University of Zurich in 2013 and served afterwards as a postdoctoral researcher at the University of Stuttgart. As part of his research he worked on scalable machine learning packages and fundamentals of clustering.

Lucas Brunner

Lucas holds an M.Sc. and B.Sc. in Computer Science from ETH Zurich, specializing in Machine Learning, Reinforcement Learning, and Distributed Computing. Currently, Lucas works at D ONE as a GenAI & Data Analytics Consultant.

Moritz Haag

M. Petrella

Hackathon

Opening Ceremony & Hackathon Start
Friday, 11.10. 15:00 - 18:00

- Welcome by VIS and D-INFK
- Opening speech
- Presentation of the schedule and Hackathon projects
- Apéro
- Introduction of mentors
- Assigning teams with projects
- 18:00: Let the Hacking begin!

Hackathon End & Closing Ceremony
Sunday, 13.10. 13:30

- Presentation of the completed projects
- Closing speech
- Award ceremony
- Apéro

Opening Speech: Noah Heusser

Having always been interested in all things data, Noah completed his apprenticeship as an IT specialist before earning his Bachelor's degree from the FH OST. He then completed a Master's degree in Computer Science at ETH Zurich. Noah's next stop was the leading Swiss IT company Ergon Informatik. Here, he applies his skills to resolving complex problems, developing software, overseeing a range of challenging projects and generally programming up a storm – with no two days the same. Alongside his responsibilities at Ergon, Noah is a university lecturer, giving him the opportunity to impart his knowledge and passion for the field of IT with the next generation of talented professionals.

ergon

16:20 16:30 F 30

Closing Speech: 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.

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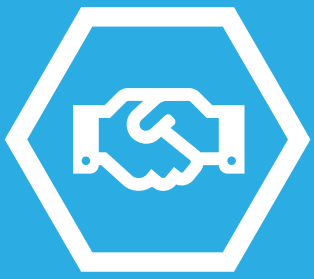

Sponsors

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

Main-Sponsor:
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: More than 220 teamplayer, flat hierarchy, lots of fun. We develop innovative software solutions on-site and together with our clients 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. Together, we make technology valuable!

Meet the ipt crew at VIScon 2024 - we look forward to sharing our experiences in talks, workshops and at our booth!

Main-Sponsor: Ergon

As Switzerland's leading provider of IT solutions and associated services, Ergon Informatik turns the latest digitalisation trends into unique customer benefits – from the initial idea to lasting market success. Founded in 1984, Ergon launched Switzerland's first e-banking platform, became Europe's first authorised Java centre and created mobile apps before smartphones became commonplace. We were also among the first Swiss innovators to exploit the potential of the Internet of Things.

At Ergon, we draw on our longstanding experience in technology, security and business to design smart solutions that meet complex user requirements. Our tech experts – celebrated throughout the industry for their top-notch expertise, develop intuitive, customisable software and internationally proven out-of-the-box software solutions for customers active in a wide range of industries.

With over 400 talented professionals on board, Ergon's penchant for excellence is evident in our award-winning corporate culture. We have been honoured with the title of Switzerland's top employer three times (in 2012, 2018 and 2021), demonstrating our commitment to nurturing the next generation of tech talent. For many years now, Ergon has been active in encouraging young people to build lasting careers in the field of computer science.

Curious to know what your future could look like at Ergon? Apply now and be part of a unique team:
www.ergon.ch/careers.

Main-Sponsor: Airlock

Airlock delivers innovative security technology solutions built using state-of-the-art software from Ergon Informatik. Founded in 2002, we are deeply committed to advancing the field of security by harnessing the latest innovations.

The Airlock® Secure Access Hub safeguards more than 35,000 applications with over 25 million active identities against unauthorised access.

What sets the Secure Access Hub apart from its competitors? Our USP lies in the seamless integration of web applications and API protection, customer identity and access management. Factored in on top is robust customer authentication for a comprehensive security solution that is unmatched in the industry.

As part of the Ergon family, Airlock boasts a growing team of around 90 professionals and a culture that thrives on collaboration, transparency and a relentless drive to innovate. This ensures that we are always at the forefront of the industry.

When it comes to developing the next generation of security enthusiasts, VIScon is our playground. We love connecting with aspiring software engineers, sharing our journey from ideas to successful products, and diving into the latest security and privacy trends.

Ready to make a smart move? Explore all the latest career opportunities at Airlock and join our unique 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 empower ideas and create new business models by developing services and products based on new technologies – from initial vision through development, deployment, production, and beyond.

We specialise in strategy and business innovation, digital solutions and applications, and device and systems engineering. Our solutions provide unique business value and a reliable foundation for ongoing success. Our 1,900 employees are based in Europe, the United Kingdom and Southeast Asia, serving clients from a wide range of industries.

Co-Sponsor:
Leica Hexagon

Hexagon is a global leader in digital reality solutions, combining sensor, software, and autonomous technologies. We boost efficiency, productivity, quality, and safety across various sectors, including industrial, manufacturing, infrastructure, public sector, and mobility.

Our technologies are shaping ecosystems to become more connected and autonomous, ensuring a sustainable future. We believe economic growth should not come at the expense of the planet and its people and drive sustainability efforts in every aspect of our business.

Our vision is a future where data is fully leveraged for sustainable growth in business, industry, and humanity.

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, weather, 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 400 software developers, hardware engineers, computer scientists, physicists and other technical professionals united by purpose to power new victories in cancer care.

Team

Natalie

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Marko

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Chief of Staff

Alisa

Decoration

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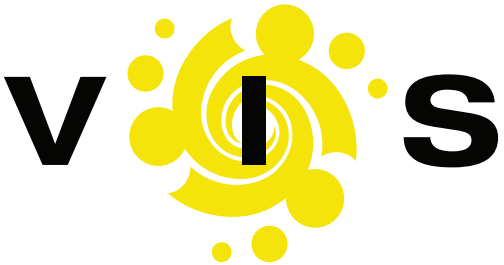

For over 1,700 Bachelor and Master students of Computer Science, Data Science and Computational Biology and Bioinformatics at ETH Zurich, VIS is the first point of contact for events, excursions, support during their studies and university political representation towards the Department of Computer Science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

Email: vis@vis.ethz.ch
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CAB E31
Universitätstrasse 6
8006 Zürich

vseth Fachverein Verband der Studierenden an der ETH

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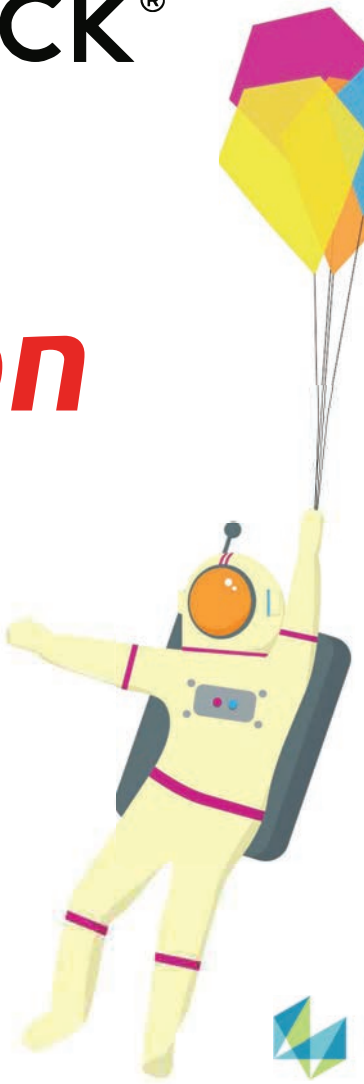

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