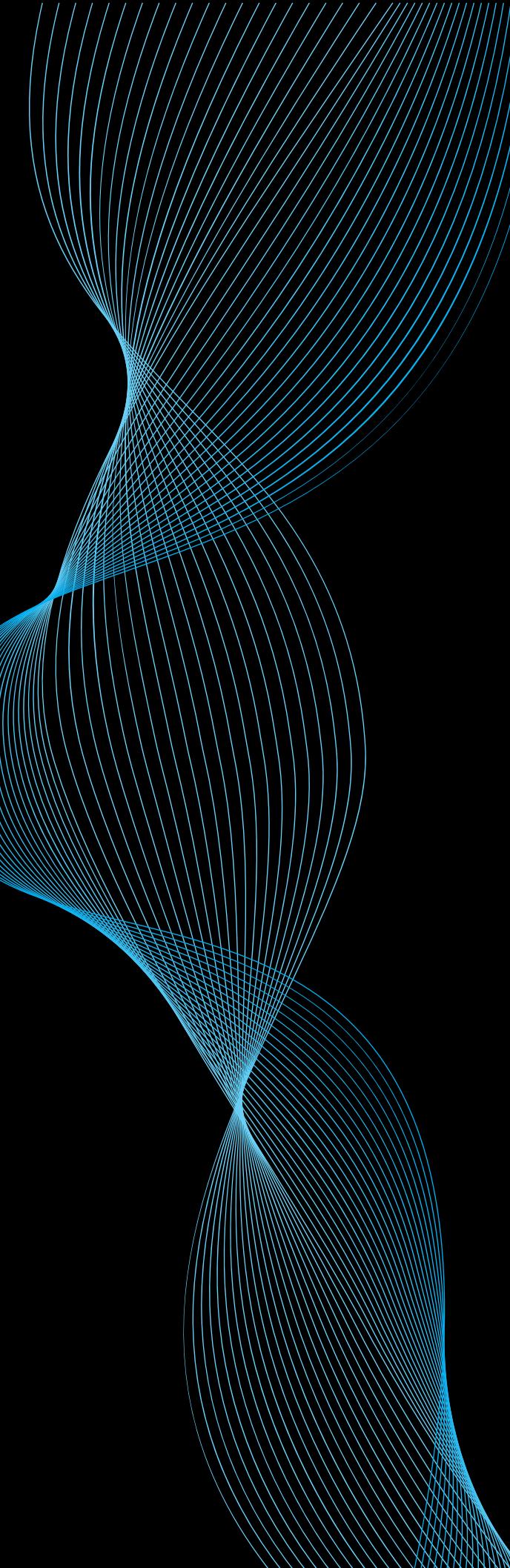
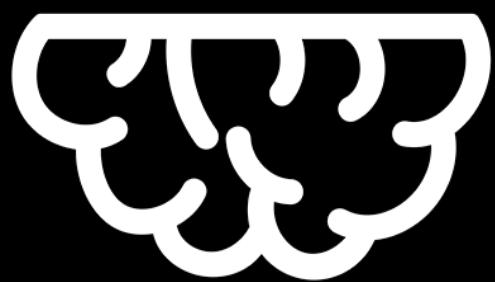


CWWS 2022

Computer Webinar Series

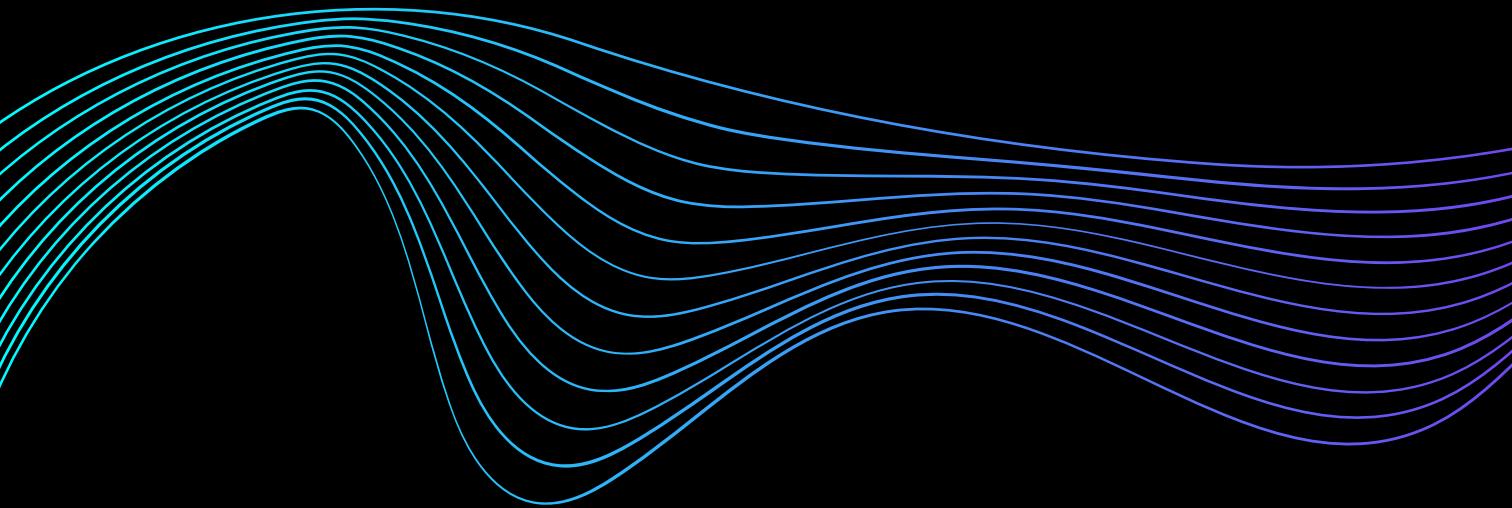


ACADEMICAL VS INDUSTRIAL PROSPECTS





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Artificial Intelligence and
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ABOUT CWS

cwsaut.ir

CWS event is the second of the series of computer science and engineering which is planned and held by the 16th round of scientific association of mathematics and computer engineering faculty.

This event is held through 4 days during the last week of August.

The main subjects discussed will be:

- Robotics
- Algorithm and Theory
- Cryptography and Blockchain
- Artificial Intelligence and Machine learning

Aside from the main lectures given in two sections of introduction (suitable for the undergraduate students on their last year) and advanced (suitable for the masters and doctorate degree students), there will also be workshops, other lectures about the industrial applications. This event is completely free and therefore we hope for you to enjoy it as passionate professionals and students.

Everyone is welcome to the second series of CWS.



**WELCOME MESSAGE FROM
PROF.DARIUSH KIANI**

**DEAN OF FACULTY OF
MATHEMATICS AND
COMPUTER SCIENCE
AUT**

On behalf of the mathematics and computer science department and on my own behalf as the head of the department, I would like to welcome you to the second round of CWS event.

It is indeed a special pleasure to have each and everyone of you in this event and we hope to be able to turn it into one of the greatest experiences of your educational journey.

Enjoy and try to make the most of the lectures given by some of the most qualified and professional lecturers who have come together to support and educate you.

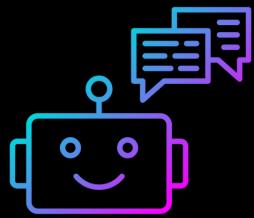


WELCOME MESSAGE FROM FATEMEH ABDOLHAY

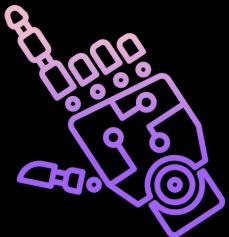
PRESIDENT OF EVENT

As the president of the CWS event, I would like to welcome you to the second round of our event. It is our great pleasure and honour to have you with us in this journey of gaining and sharing knowledge. To give you an overview of the previous round, we hosted over 5000 participants and more than 30 speakers who were some of the best and most professional people in their fields. We went above and beyond to make sure that every minute of the event was informative and appealing to the participants, and the second round is no exception. We tried to outdo ourselves and do our best in meeting your expectations yet another time. I'd like to say on behalf of the whole group that we hope all of you enjoy the event and have a phenomenal experience.

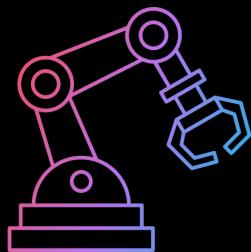
Robotics - 23 Aug



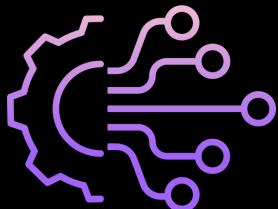
Human-Robot Authority Sharing in Robot-assisted Medicine via Intelligent Control and Machine Learning



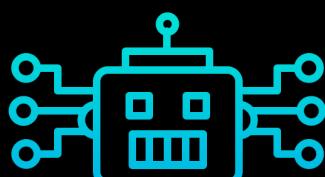
Functional Nanomaterial Composites for Soft Sensing and Actuation



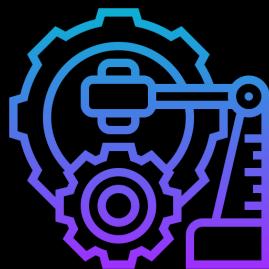
A Real-time Motion Planning Framework for Connected and Automated Vehicles: From Theory to Scaled Experiments



Observable Divergence Theorem and Applications



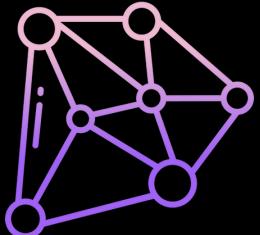
Learning, Autonomous Vision-based Flight



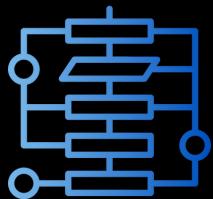
WORKSHOP:
Robot Operating System



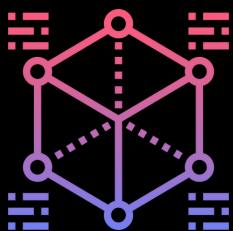
Algorithm & Theory - 24 Aug



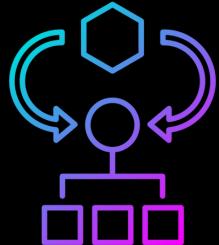
Chord Signaling



Recent Academic Research Trends in the
Theory of Machine Learning



Heterogeneous Differential Privacy via Graphs



WORKSHOP:
Spanner network and its applications



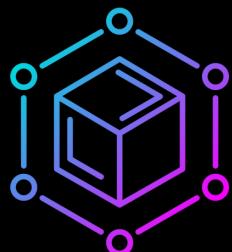
Blockchain & Cryptography - 25 Aug



Security of Cryptographic Implementations



The future of cryptography is coming: Post-quantum cryptography



Transparent, Trustworthy, and Privacy-Preserving Supply Chain



Blockchain-based smart contracts for shareholder voting



Practical Cryptography in Blockchain



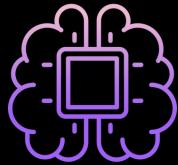
WORKSHOP:
Basics of Solidity Development



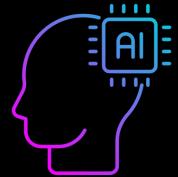
AI & Machine learning - 26 & 27 Aug



An intro to Recommender Systems- case study:
how does Netflix recommend movies?



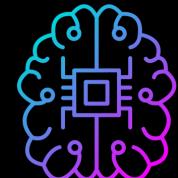
Does Anyone Dream of Invisible AI?



Seeking Flat Minima of Training Loss for
Improved Generalization



Game theory and Reinforcement Learning



Interpretability of Machine Learning Models



Medical image segmentation using U-Net



Recent Developments and Uphill Battles in



Trajectory prediction and planning in self-driving
cars, an overview of research in Five AI (Bosch)
and academia



PROF. MAHDI TAVAKOLI

23 AUG, 17-18 (IRDТ)

PROFESSOR OF ELECTRICAL & COMPUTER
ENGINEERING DEPARTMENT, UNIVERSITY
OF ALBERTA

"Human-Robot Authority Sharing in Robot-assisted Medicine via Intelligent Control and Machine Learning"

Surgical, therapeutic, diagnostic, and rehabilitative interventions can be significantly enhanced using computer-integrated robotic systems with real-time decision-making capabilities that work under the direct, shared, or supervisory control of medical professionals (surgeons, therapists and physicians). Incorporating appropriate levels of autonomy in systems for healthcare delivery has the potential to lower the mental and physical loads on clinicians while improving the reliability, precision and safety of the interventions for patients. For example, an autonomous system can help to build computerized models of a medical intervention, learned through demonstration by human experts, and transfer the learned skills to a robot that is in charge of providing intelligent assistance to surgeons or therapists. In this seminar, Dr. Mahdi Tavakoli, Professor at the University of Alberta, discusses several applications of medical robotics and their related challenges, and offers solutions based on combining the capabilities of humans with the precision, accuracy, and fast decision-making capabilities of machines.





DR. MORTEZA AMJADI

23 AUG, 15-16 (IRDT)

ASSISTANT PROFESSOR AT
HERIOT-WATT UNIVERSITY

"Functional Nanomaterial Composites for Soft Sensing and Actuation"

Soft machines have many applications, ranging from multifunctional wearable medical devices for feedback therapy to prosthetics, non-invasive surgical tools, and soft robots for safe human-robot interaction. High-performance flexible sensors and actuators are the key components of soft machines. In this talk, I will cover our latest research activities on the development of functional nanocomposites based wearable physical sensors for human motion detection and soft robotics. I will demonstrate how bioinspired structures can help to improve the sensing performance of wearable sensors. The next part of my talk will focus on the development of programmable soft actuators based on composite materials. Finally, I will highlight challenges associated with the design of integrated soft machines capable of multimodal sensing and controlled stimulation.





DR. BEHDAD CHALAKI

23 AUG, 12-13 (IRDT)

GRADUATE RESEARCH ASSISTANT AT
THE UNIVERSITY OF DELAWARE

"A Real-time Motion Planning Framework for Connected and Automated Vehicles: From Theory to Scaled Experiments"

Traffic congestion has been persistently growing over the last decades in US urban areas since road capacity has not grown at the same pace as the population in urban areas. Additionally, traffic safety is another growing concern. In 2018, there were 6M traffic accidents in the US resulting in more than 35K fatalities and 2.5M people injured. One of the promising ways to mitigate traffic congestion and improve safety is integrating information and communication technologies in cities by utilizing connected and automated vehicles (CAVs). In this talk, we will go through a journey from designing an optimal decentralized coordination framework for CAVs at different traffic bottlenecks to implementing and validating them in a scaled testbed. First, we will establish a general framework for CAVs at multiple adjacent intersections as a common bottleneck in urban areas. Then, we will provide several approaches to enhance the performance of our coordination framework in the presence of uncertainty originated from errors in vehicle-level tracking, noisy measurements, etc. Finally, we will demonstrate the effectiveness of our framework through scaled experiments.





PROF. KAMRAN MOHSENI

23 AUG, 16-17 (IRDT)

PROFESSOR OF MECHANICAL AND
AEROSPACE ENGINEERING, AT
THE UNIVERSITY OF FLORIDA

"Observable Divergence Theorem and Applications"

Many classical field equations, including fluid mechanics, elasticity, electromagnetism, etc, are prone to high wavenumber mode generations as they evolve. In fluids, this continuous generation of high wavemodes results in a cascade of energy to an ever smaller scales in turbulence, creation of shocks in compressible flows, and generation of sharp interfaces in two-phase flows. Similar process is observed in crack propagation in solids and other fields. Traditionally, this high wavenumber irregularity is remedied by the addition of a Laplacian term (dissipation term). In this talk, I introduce the concept of observability limit of field quantities and the consequence of that on the Gauss divergence theorem and Stokes curl theorem. Observable Gauss and Stokes theorems are then derived. These theorems allow the derivation of regularized' field quantities from basic conservation laws. To this end, observable' Euler and Navier-Stokes equations are formally derived. It is expected that these equations simultaneously regularize shocks, turbulence, and sharp interfaces. Several theoretical results (including existence, uniqueness, convergence to entropy solutions, and observable Lie bracket) and numerical simulations will be presented and compared with existing numerical methods. Finally, I will discuss how the observable field theory could be applied in other disciplines involving problems with wavenumber-infinity irregularities such as fracture, crack propagation, sharp interfaces in electromagnetism, etc.





PROF.DAVIDE SCARAMUZZA

23 AUG, 10-11 (IRDT)

PROFESSOR AND DIRECTOR OF THE
ROBOTICS AND PERCEPTION GROUP
AT UNIVERSITY OF ZURICH

"Learning, Autonomous Vision-based Flight"

The latest research in learning deep sensorimotor policies for agile vision-based quadrotor flight will be summarized in this webinar. Learning sensorimotor policies represents a holistic approach that is more resilient to noisy sensory observations and imperfect world models. However, training robust policies requires a large amount of data. Professor Davide Scaramuzza will show that simulation data is enough to train policies that transfer to the real world without fine-tuning. They achieve one-shot sim-to-real transfer through the appropriate abstraction of sensory observations and control commands. He will show that these learned policies enable autonomous quadrotors to fly faster and more robustly than before, using only onboard cameras and computation. Applications include acrobatics, high-speed navigation in the wild, and autonomous drone racing.





MR. ALIREZA ABDOLKARIMI

23 AUG, 18-20 (IRDT)

MASTER STUDENT OF ARTIFICIAL
INTELLIGENCE IN K. N. TOOSI
UNIVERSITY OF TECHNOLOGY

"A workshop over Robot Operating System"

Introduction of ROS

Knowing different parts of ROS such as Nodes and Topics

More features and tools like ROS BAG (recording and replaying messages)

Programming several publishers and subscriber programs

Implement more messages and parameters

How to implement action server and client

Introduction of Launch files

Introduction of TFs



PROF. AMIN SHOKROLLAHI

24 AUG, 10-11 (IRDT)

FULL PROFESSOR OF MATHEMATICS AND
COMPUTER SCIENCE, SWISS FEDERAL
INSTITUTE, LAUSANNE (EPFL)

"Chord Signaling"

Communication of data on electrical wires between chips is fast gaining prominence in the electronics industry. Because most of the components of the transmitter and the receiver of such links are analog, rather than digital, they don't benefit as much from Moore's law. On the other hand, the need to transmit data ever faster calls for higher rates of transmission over existing electrical wires. Since in this type of communication noise is highly frequency dependent, higher transmission rates lead to much higher noise, and therefore a much higher growth of power consumption than linear. The industry has long recognised this problems as the "Interconnect bottleneck". Fundamental solutions to this important problem have remained elusive, however. A look at the capacity of these channels reveals that today we are only transmitting at anywhere between 1% to 4% of the capacity. Therefore, at least on the surface, there is a lot to be gained by applying methods from communication theory to this problem. However, unlike many other systems such as wireless, DSL, satellite, or optical communication, the constraints on the chip-to-chip communication system are very different: transmission rates are typically 1000 times those encountered in wireless communication. On the other hand, the energy consumed for the transmission and recovery of each bit is about 1000 times less than what is customary in wireless. Also, latency requirements are extremely stringent, allowing only latencies up to very few nanoseconds. Therefore, it is not possible to use fancy processing methods. In this talk I will introduce a new modulation scheme for chip-to-chip communication which we call chordal codes. These codes are somewhat reminiscent of spatial MIMO systems, and provide a first step towards a better utilisation of the available communication bandwidth between chips. Current implementations of systems based on these codes show a large reduction of total power of the communication PHY and a large increase of the communication speed compared to other classical system.





DR. HOSSEIN ESFANDIARI

24 AUG, 15-16 (IRDT)

SENIOR RESEARCH SCIENTIST AT GOOGLE
NYC ALGORITHMS AND OPTIMIZATION
TEAM

"Recent Academic Research Trends in the Theory of Machine Learning"

In this talk, we present a few of the recent academic research trends in the theory of machine learning. We first explain, at a high level, a few basic and well-studied problems in machine learning such as clustering, online learning, and feature engineering. Next, we introduce a few challenges in using the classical solutions to these problems in the modern era, such as scalability and transparency. We proceed by presenting some of the new results and techniques to deal with these challenges. Along the way, we propose some open problems in this context.



DR. JAVAD EBRAHIMI

24 AUG, 17-18 (IRDT)

ASSISTANT PROFESSOR AT THE
DEPARTMENT OF MATHEMATICAL SCIENCES
AT SHARIF UNIVERSITY OF TECHNOLOGY



"Heterogeneous Differential Privacy via Graphs"

In this presentation, we first review the notion of differential privacy. We generalize a previous framework for designing utility-optimal differentially private (DP) mechanisms via graphs, where datasets are vertices in the graph and edges represent dataset neighborhood. The boundary set contains datasets where an individual's response changes the binary-valued query compared to its neighbors. Previous work was limited to the homogeneous case where the privacy parameters across all datasets were the same and the mechanism at boundary datasets was identical. Our work shows the mechanism can take different distributions at the boundary and the privacy parameter ϵ is a function of neighboring datasets, which recovers an earlier definition of personalized DP as a special case. The problem is how to extend the mechanism, which is only defined at the boundary set to other datasets in the graph in a computationally efficient and utility optimal manner. Using the concept of the Strongest induced DP condition we solve this problem efficiently in polynomial time in the size of the graph)





DR. FATEMEH BAHARIFARD

24 AUG, 12-14 (IRDT)

SENIOR POSTDOC RESEARCHER
AT INSTITUTE FOR RESEARCH IN
FUNDAMENTAL SCIENCES (IPM)

"Spanner network and its applications"

A geometric network G is a t -spanner for a point set P , if a $t > 1$ exists such that for each pair of points u and v in P , there is a path in G between u and v , whose length is less than or equal to the t times of the Euclidean distance between u and v . The minimum t such that G is a t -spanner for P is stretch factor, or dilation of G . Spanners can be defined in other spaces as well. The quality of a spanner measured by some properties such as size, weight, degree and fault-tolerance. Additionally, the time required to compute such spanners must be as small as possible. Accordingly, different algorithms presented for the construction of spanners with various properties. The construction of sparse spanners has been shown to have numerous application areas such as approximating minimum spanning tree, metric space searching, broadcasting in communication networks, approximation of large graphs in the real world such as social networks, etc.





PROF. AMIR MORADI

25 AUG, 17-18 (IRDت)

PROFESSOR AT RUHR UNIVERSITY
BOCHUM, GERMANY

"Security of Cryptographic Implementations"

The digital revolution has already changed our lives dramatically, and we are observing the digitalization of almost every piece of our daily life. Digital logic circuits are the foundation of such a revolution, and their integration into our lives implies their access to citizens' private and secret data. Cryptography is obviously a key point to address such concerns, but it is unfortunately not adequate to protect the data which is stored in and processed by a circuit, since physical characteristics and behavior of a circuit has a direct relation to its activities. Examples include its power consumption and its reaction to maliciously-injected faults. As a clear outcome, such digital logic circuits have to be secured as well, since most of them are in control of the original users, who can play the role of an adversary. This talk will review the basics of security of cryptographic implementations. More precisely, the basics of side-channel analysis attacks and mitigation techniques will be presented.





MS. SOFIA CELI

25 AUG, 15-16 (IRDT)

CRYPTOGRAPHY ENGINEER,
CRYPTOGRAPHY RESEARCHER

"The future of cryptography is coming: post-quantum cryptography"

The threat of quantum computers is ever-present: they will be able to break the majority of cryptography we use nowadays. But, there is hope. In this talk we will explore post-quantum cryptography: what it is, where it stands and what is coming.



PROF. SALIL KANHERE

25 AUG, 12-13 (IRDT)

**PROFESSOR IN THE SCHOOL OF COMPUTER
SCIENCE AND ENGINEERING AT UNSW
SYDNEY, AUSTRALIA**

"Transparent, Trustworthy and Privacy-Preserving Supply Chain"

Over the years, supply chains have evolved from a few regional traders to globally complex chains of trade. Consequently, supply chain management systems have become heavily dependent on digitisation for the purpose of data storage and traceability of goods. However, current approaches suffer from issues such as scattering of information across multiple silos, susceptibility of erroneous or untrustworthy data, inability to accurately capture physical events associated with the movement of goods and protection of trade secrets. Our work aims to address above mentioned challenges related to traceability, scalability, trustworthiness, and privacy. To support traceability and provenance, a consortium blockchain based framework, ProductChain, is proposed which provides an immutable audit trail of product's supply chain events and its origin. The framework also presents a sharded network model to meet the scalability needs of complex supply chains. Next, we address the issue of trust associated with the qualities of the commodities and the entities logging data on the blockchain through an extensible framework, TrustChain. TrustChain tracks interactions among supply chain entities and dynamically assigns trust and reputation scores to commodities and traders using smart contracts. For protecting trade secrets, we propose a privacy-preservation framework PrivChain, which allows traders to keep trade related information private and rather return computations or proofs on data to support provenance and traceability claims. The traders are in turn incentivised for providing such proofs. A different privacy-preservation approach for decoupling the identities of traders is explored in TradeChain by managing two ledgers: one for managing decentralised identities and another for recording supply chain events. The information from two ledgers is then collated using access tokens provided by the data owners, i.e., traders themselves. We will conclude the talk with some future directions.





PROF. MARC PILKINGTON

25 AUG, 19-20 (IRDT)

ASSOCIATE PROFESSOR OF BUSINESS
STUDIES, EPOKA UNIVERSITY

"Blockchain-based smart contracts for shareholder voting"

In this distinguished invited talk, I shed light on the unforeseen potential of blockchain technology for enhanced corporate governance. I briefly review the seminal literature on the firm, and show that blockchain adoption can be conducive to reduced agency costs. Blockchain can also be used for e-shareholder voting purposes (e.g. at the annual general meeting) and for improved representation of small shareholders. More generally, with democratic principles under assault in an increasing number of nations throughout the world, the blockchain revolution foreshadows a new governance paradigm, democracy 3.0, also called liquid democracy that can be transparency enhancing and corruption minimizing. Pakistan and Dubai constitute two notable e-governance pioneers in this respect.



DR. SHAHRIAR EBRAHIMI

25 AUG, 10-11 (IRDT)

BLOCKCHAIN TEAM
LEAD AT NOBITEX

"Practical Cryptography in Blockchain"

In this talk, we start with an overview of the fundamental building blocks in blockchain. We dive into the details of how different cryptographic schemes are employed to ensure security and robustness of a blockchain. The talk continues focusing more on practical aspects of cryptography in exchanges, such as Hot/Cold wallets, MultiSig accounts, and Deposit/Withdraw processes. Finally, we discuss matter of privacy in blockchain transactions from users' perspective and its current practices based on Zero-Knowledge Proof (ZKP) protocols and Mixing tools.



MR. ALI HAJJAR

25 AUG, 13-14:30 (IRDT)

BLOCKCHAIN DEVELOPER
AT NOBITEX

"Basics of Solidity Development"





PROF. MARYAM KAMGARPOUR

26 AUG, 15-16 (IRDT)

PROFESSOR AT EPFL

"Game theory and Reinforcement Learning"

A rising challenge in control of large-scale control systems such as the electricity and the transportation networks is to address autonomous decision making of interacting agents, i.e. the subsystems, with local objectives while ensuring global system safety and performance. In this setting, a Nash equilibrium is a stable solution outcome in the sense that no agent finds it profitable to unilaterally deviate from her decision. Due to geographic distance, privacy concerns or simply the scale of these systems, each agent can only base her decision on local measurements. Hence, a fundamental question is: do agents learn to play a Nash equilibrium strategy based only on local information? I will discuss conditions under which we have an affirmative answer to this question and will present algorithms that achieve this learning task. In particular, I will focus on our approach for learning in convex and non-convex games, and in multi-agent reinforcement learning.





MS. NAIME RANJBAR

26 AUG, 13-14 (IRDT)

ASSOCIATE DATA SCIENTIST AT AI LABS,
DATA AND DECISION SCIENCE,
COMMONWEALTH BANK OF AUSTRALIA

"An intro to Recommender Systems- case study: How does Netflix recommend movies?"

In today's era of big data, we are constantly bombarded with loads of information on the web which makes it hard for us to find our relevant items or services. This problem is called "information overload" and we face it in our daily decision makings such as what movie to watch, what news to read, or what product to buy. Recommender Systems have shown an increasingly significant role in helping users to choose contents that will meet their needs. In fact, recommender systems meaningfully facilitate the efficient decision-making and turns the huge amount of different available options from a burden into a benefit. In this talk, I am going to cover such topics as what is a recommender system, what are the most well-known applications, what are the main algorithms, how Netflix recommends movies, what are the main challenges in recommender systems, and what are the future directions for recommender systems.





MS. MAHLA ALIZADEH

26 AUG, 10-11 (IRDT)

PH.D. STUDENT AT THE UNIVERSITY OF
SIEGEN

"Does Anyone Dream of Invisible A.I.?"

This talk addresses modern intelligent systems that involve complex communication between human and invisible algorithmic actors, raising various ethical, social, and legal challenges that require appropriate design interventions. Social media platforms and authentication systems are examples of such applications and demonstrate the complexity of communication between the invisible algorithm and the users of the system. The potential economic benefits of these emerging approaches ultimately lead to their adoption by most service providers and developers. However, the consequences of such invisible algorithmic processes in their entirety and the appropriate ways to intervene in them are still an open research question. I will therefore present some examples of current negative consequences and discuss how approaches such as user-centred design and speculative design can be used to find alternative pathways that are more transparent, responsive, and allow us to consider possible negative consequences of adoption before such processes are embedded.





DR. HOSSEIN MOBAHI

26 AUG, 21-22 (IRDT)

RESEARCH SCIENTIST AT GOOGLE

"Seeking Flat Minima of Training Loss for Improved Generalization"

In today's heavily overparameterized models, the value of the training loss provides few guarantees on model generalization ability. Indeed, optimizing only the training loss value, as is commonly done, can easily lead to suboptimal model quality. Motivated by prior work connecting the geometry of the loss landscape and generalization, we introduce a new and effective procedure for instead simultaneously minimizing loss value and loss sharpness. In particular, our procedure, Sharpness-Aware Minimization (SAM), seeks parameters that lie in neighborhoods having uniformly low loss; this formulation results in a min-max optimization problem on which gradient descent can be performed efficiently. We present empirical results showing that SAM improves model generalization across a variety of benchmark datasets (e.g., CIFAR-10, CIFAR-100, ImageNet, finetuning tasks) and models, yielding novel state-of-the-art performance for several. Additionally, we find that SAM natively provides robustness to label noise on par with that provided by state-of-the-art procedures that specifically target learning with noisy labels.





DR. DANEIL KHASHABI

26 AUG, 19-20 (IRDT)

ASSISTANT PROFESSOR AT JOHNS
HOPKINS UNIVERSITY

"Recent Developments and Uphill Battles in Natural Language Processing"

As AI-driven language interfaces (such as chat-bots) become more integrated into our lives, they need to become more versatile and reliable in their communication with human users. What technologies are behind such developments and what are the open challenges? In this talk, I will describe the recent advances in natural language processing, particularly the advent of language models and the different ways it has affected the state of our technology. Then I will focus on the open problems we're facing. I will conclude with my speculations on the future of NLP research toward broader NLP systems by addressing the limitations of the presented ideas and other missing elements needed to move toward more general-purpose interactive language understanding systems.





MS. MALIKEH EHGHAGHI

26 AUG, 20-21 (IRDT)

MACHINE LEARNING RESEARCHER AT
WINTERLIGHT LABS

"Interpretability of Machine Learning Models"

Nowadays, artificial intelligence is intertwined with our daily life and many important decisions are made by machine learning models that can be highly effective on our lives. Critics believe that machine learning creates black-box models. Meaning, these systems have valuable outputs that are not understandable or explainable for human beings. Although, machine learning can be interpretable which means we can create evaluable and comprehensible models and that is why we can use artificial intelligence even in high-risk areas like medical or economical fields. Interpretable machine learning refers to methods and models that make learning systems' behavior and predictions understandable for humans. In this webinar, we'll explain common interpretation methods for machine learning models in general.





MR. AMIRHOSSEIN FOROUGHI

26 AUG, 16:30-18:30 (IRDT)

ARTIFICIAL INTELLIGENCE AT SMILE SYMBOL

"Medical image segmentation using U-Net"

Medical image segmentation plays a vital role in computer-aided diagnosis procedures. Medical image segmentation involves the extraction of regions of interest (ROIs) from 3D image data, such as from Magnetic Resonance Imaging (MRI) or Computed Tomography(CT) scans. The main goal of segmenting this data is to identify areas of the anatomy required for a particular study. Recently, U-Net is widely used in medical image segmentation. In this lecture we will see the procedure from data collection and preprocessing and utilizing segmentation-models framework to train a model.





MR. MOHAMMADHOSSEIN BAHARI

27 AUG, 11-12 (IRDT)

INTERN AT FIVE AI

"Trajectory prediction and planning in self-driving cars, an overview of research in Five AI (Bosch) and academia "

Trajectory prediction and planning in self-driving cars, an overview of research in Five AI (Bosch) and academia Self-driving cars have gained lots of attention in recent years. Due to the enormous transportation change they will bring about, many companies invested in developing the technology, however, existing solutions are still not safe enough for open-world application. In this talk I will cover Five AI (www.five.ai/) solutions for prediction and planning. Five AI is a UK-based start-up working on self-driving tech. It has recently been purchased by Bosch, the largest automotive supplier. Next, I will talk about some of the recent studies about the generalization of trajectory prediction models in VITA lab, EPFL.



MEET THE TEAM



AmirHossein Foroughi



Fatemeh Abdolhay



Amir Khodadust



AmirAli Baastani

CWS TEAM



Sobhan Moghimi



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نوبيتکس NOBITEX



The future of the world's economy is associated with blockchain, a technology that we didn't hear as much about a few years ago but now nearly no one can deny the opportunities that the world of cryptocurrencies and the decentralized economy based on blockchain have created for us. In this path, the speed of developments is so high that we witness the expansion of blockchain use cases everyday and have to wait for the new world that this technology will bring for us.

Nobitex, the first and largest Iranian cryptocurrency exchange platform, was established in 1996 with the aim of creating a safe and local platform for buying and selling, investing and maintaining cryptocurrencies by a group of graduates from the country's top universities, and has so far gained the trust of more than four million users.

This platform, relying on the technical knowledge of a team contained of the best graduates of the country, provides its users with the best and newest features and facilities so that they can enter the cryptocurrency market with ease and the highest security. Nobitex has made it possible to transfer the best cryptocurrencies on the platform of various blockchain networks so that Iranian users can have an equal opportunity with citizens of other countries to access global markets and use this investment opportunity, away from international threats.

Today, the trust of millions of Iranian users is Nobitex's biggest achievement after 4 years of activity. The trust that has caused the largest amount of cryptocurrency transactions between Iranian platforms to belong to Nobitex.

We believe that in the near future, cryptocurrencies and blockchain, due to features such as high transfer speed, security and low cost will become one of the most important pillars in the development of the digital economy especially in the field of exports, along with disruptive technologies such as Metaverse. Therefore, Nobitex is looking forward to entering the global market by expanding services and developing innovative products in this new financial system, while increasing the accessibility of Iranian users and helping to increase the contribution of digital economy in the gross national product (GNP).

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THANKS FOR YOUR ATTENTION,
HOPE TO SEE YOU ALL IN NEXT SERIES.



