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دانشگاه صنعتی شریف،
سالن دکتر ربیعی

۳ و ۴ و ۵ اسفندماه | Feb 22-24th

Resana's Annual Conference on Technology

ReACT 2023

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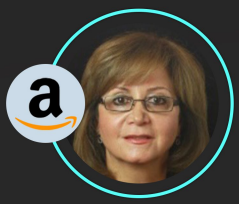
Resana's Annual Conference on Technology

ReACT 2023

Speakers



Jasmin Farshi
Amazon

Mohammad Shahidepour
Illinois Institute of Technology

Alexandre Alahi
EPFL

Mohammad Samizadeh Nikoo
ETH

Alireza Khaligh
University of Maryland

Mohammad Alizadeh
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Shiva Amiri
Pivotal Life Sciences

Mohammad Akbarpour
Stanford

Omeed Momeni
UC Davis

Mohammad Hossein Rohban
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Mohammad Hossein Nabian
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Amin Babazadeh
University of Vienna

Koosha Kalantari
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Sanaz Sabzevari
KTH

Iman Askarian
University of Calgary

Mohammad Khosravi
Delft University of Technology

Feb 22-24th

In Person
Sharif University of Technology

skyroom

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Mohammad Shahidehpour

ReACT 2023

Bodine Chair Professor
Illinois Institute of Technology

Abstract

Hydrogen has been advocated globally as a promising energy carrier to achieve low-carbon economy. The integration of urban transportation network (UTN) and renewable energy-based power distribution network (PDN) can produce and deliver a sufficient level of hydrogen to refueling station to promote and enhance the quest for the proliferation of electric vehicles. In this presentation, we discuss the essence of hydrogen energy supply for mobility and other industrial applications. We also introduce hydrogen refueling service fee (HRSF) as a scheduling strategy to guide hydrogen fuel cell electric vehicles (HFCEVs) in their selection of hydrogen refueling stations. The optimal HRSF-based coordinated operation model would minimize UTN travel and PDN operation costs. It would also reduce carbon emission, while considering nodal carbon restrictions and uncertainties of renewable and distributed generators, and origin-destination traffic demand and constraints. The proposed model is solved by the decentralized alternative direction method of multipliers (ADMM) algorithm and verified on the hydrogen-integrated UTN and PDN in Sioux Falls. Numerical results demonstrate that popularizing HFCEVs contributes to emission reduction and the HRSF-based coordinated operation strategy is effective in reducing the overall emissions, promoting renewable energy accommodation, and improving the holistic operation efficiency of the hydrogen-integrated UTN and PDN.

Biography

Dr. Mohammad Shahidehpour is a University Distinguished Professor, Bodine Chair Professor of Electrical and Computer Engineering, and Director of the Robert W. Galvin Center for Electricity Innovation at Illinois Institute of Technology (IIT). He has over 40 years of experience with power system operation, planning, and control and has completed several major projects for the electric energy sector. His project on Perfect Power Systems has converted the entire IIT Campus to an islandable microgrid. Dr. Shahidehpour was the recipient of several technical awards including of the IEEE Burke Hayes Award for his research on hydrokinetics, IEEE/PES Outstanding Power Engineering Educator Award, IEEE/PES Ramakumar Family Renewable Energy Excellence Award, IEEE/PES Douglas M. Staszesky Distribution Automation Award, and the Edison Electric Institute's Power Engineering Educator Award. He has co-authored 6 books and over 800 technical papers on electric power system operation and planning, and served as the founding Editor-in-Chief of the IEEE Transactions on Smart Grid. Dr. Shahidehpour is the recipient of the 2009 honorary doctorate from the Polytechnic University of Bucharest. He is a Fellow of IEEE, Fellow of the American Association for the Advancement of Science (AAAS), Fellow of the National Academy of Inventors (NAI), and an elected member of the US National Academy of Engineering (NAE). He is also listed as a highly cited researcher on the Web of Science (ranked in the top 1% by citations demonstrating significant influence among his peers).

Skyroom

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Jasmin Farshi

ReACT 2023

Vice President of Manufacturing
Amazon

Abstract

Jasmin Farshi's presentation will discuss her role at Amazon as the Vice President of advanced manufacturing engineering. She will cover an overview of her team's work in scaling all Amazon products from a few in prototype stage to millions on manufacturing lines. It will cover specific examples in automating the manufacturing assembly lines, test, and data reporting and analysis. Also how latest development in robotics and machine learning can further reduce number of operators in the factory.

Biography

Jasmin has a masters in Engineering from University of Illinois Chicago, an MBA from the University of Chicago Booth School of Business, and over 20 years experience in telecommunications and consumer electronics manufacturing in top companies such as Amazon and Motorolla. She currently leads the Advanced Manufacturing Engineering at Amazon Lab126. She leads multiple global functions through new product introduction (NPI), new technology manufacturing, and process development for all first-to-market initiatives from Kindles to satellites. Her diverse team consists of electrical engineers, computer engineers, material scientists, NPI project managers, test engineers, manufacturing assembly engineers, and several domain experts, including Camera, wireless, surface-mount technology (SMT), display, and optics. This highly talented team develops robust strategies to optimize manufacturing of innovative solutions and to scale products from a few to millions for Amazon customers.

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Alexandre Alahi

ReACT 2023

EPFL **Assistant Professor**
EPFL

Abstract

I am going to share lessons I have learned as a member of several Ph.D. admission programs in the field of AI/ ML/ CV. What are the things you can do to increase your likelihood of acceptance? What you might want to avoid? I will share some examples of successful profiles who got accepted to top-tier universities such as Stanford/ Mit/ Berkeley/ CalTech/ EPFL/ ETH.... The talk will be interactive. Feel free to ask any questions during the presentation.

Biography

Alexandre Alahi is an assistant professor at EPFL leading the Visual Intelligence for Transportation laboratory (VITA). Before joining EPFL in 2017, he spent multiple years at Stanford University as a Post-doc and Research Scientist. His research lies at the intersection of Computer Vision, Machine Learning, and Robotics applied to transportation & mobility. To make Artificial Intelligence (AI) driven systems such as autonomous vehicles a safe reality, his lab works on a new type of Artificial Intelligence (AI), namely socially-aware AI, i.e., an AI augmented with social intelligence.

In 2022, Alexandre was recognized as the top 100 Most Influential Scholar in Computer Vision over the past 10 years. His research team received the editor's choice award from the journal Image and vision computing (2021) for their work on human motion prediction, the honorable mention at an ICCV workshop (2019) for their work on human pose estimation, the CVPR Open Source Award (2012) for their work on Retina-inspired image descriptors, and the ICDSC Challenge Prize (2009) for their sparsity-driven algorithm that has tracked more than 100 million pedestrians to date.

His work has been licensed to several companies and covered internationally by BBC, abc, PBS, Euronews, Wall street journal, and other national news outlets around the world. Alexandre has also co-founded multiple startups such as Visiosafe, and won several startup competitions. He was elected as one of the Top 20 Swiss Venture leaders in 2010.

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Shiva Amiri

ReACT 2023

VP, Head of AI and Data Intelligence
Pivotal Life Sciences

Abstract

This talk explores the space of computational biology and AI technologies within personalized health and computational drug discovery. There has been rapid growth in this space which holds great promise for advances in medical discoveries and healthy longevity. We will cover the various areas of work in this growing space in science and technology and drill into building analytics and AI platforms for personalized health and drug discovery using large-scale data.

We will discuss platforms that utilize large-scale genomic and phenotypic data sources as well as other emerging and new data sources, genomic analysis pipelines such as genome wide association study (GWAS), and production machine learning services, which power direct-to-consumer and therapeutics products. We will explore how the growth of data sources, compute, and algorithms will play an increasingly important role in the future of medicine.

Biography

Shiva is the VP, Head of AI and Data Intelligence at Pivotal Life Sciences where she is building a data science team and AI platforms for a growing international investment group. She was formerly the Director of Data Technology and Infrastructure at 23andMe where she built technology for the consumer health and the drug discovery side of the company. Previously, Shiva was the Director of Data Science at Zymergen Inc., a molecular technology company in the Bay Area focused on generating new chemicals. Prior to Zymergen, she was the CEO of BioSymetrics Inc., a biomedical machine learning startup in New York. She has a PhD (DPhil) in Computational Biophysics from the University of Oxford and a HBSc. in Computer Science and Human Biology from the University of Toronto.

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Mohammad Samizadeh Nikoo

ReACT 2023

Postdoctoral Researcher
ETH Zürich

Abstract

There is a never-ending push for electronics and photonics systems to provide faster operation speeds at smaller scales, to deal with the exponential increase in computation and communication demands. The performance of traditional devices, however, is reaching the theoretical limits, while the existing computers and communication platforms still require giant performance boosts to reach the level of a human brain, which is essential for the future intelligent world. In this seminar, I will present innovative nanodevices which can serve as building blocks for massive data processing and communication schemes. Nanoplasma devices and electronic metadevices will be discussed as innovative technologies for ultrahigh capacity telecommunications with applications in 6G and beyond.

I will then present glass-like electronics in which nanoscpoic manipulation of structural states in a Mottsystem enables a high performance scheme for neuromorphic computation. Finally, I will present an outlook on promising research directions to further increase the performance of data processing and communication platforms, which pave the way towards wireless cognition and three-dimensional brain-like computers.

Biography

Mohammad Samizadeh Nikoo is a postdoctoral researcher at the Integrated Systems Laboratory at ETH Zurich. He received his PhD from EPFL in 2022, where he established new device technologies for terahertz electronics and neuromorphic computation. Dr. Samizadeh Nikoo has research experiences in nanoscopic physical phenomena, functional devices and circuit-level implementations. His current research interest is development of new electronics and optoelectronics device concepts for ultrahigh-speed systems with applications in data exchange and processing.

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Alireza Khaligh

Professor
University of Maryland

ReACT 2023

Abstract

Power electronics has emerged as an enabling technology in deployment of next generation of systems including but not limited to transportation systems, renewable energies, energy harvesting applications, robotics, industrial systems, smart grids, and data centers, among many others. The demand for higher efficiency, higher power density, specific power and better thermal management poses stringent challenges for these power electronic converters to accommodate in these systems. This presentation will put forward some of the current research areas, which are being pursued in the Maryland Power Electronics Laboratory (MPEL). We will summarize some of the research ideas and outcomes of recently completed projects at MPEL. This will include design consideration and development of power dense and highly efficient power converters for wireless charging of electric vehicles, solar photovoltaics (PV), datacenters, and residential energy router systems.

Biography

Alireza Khaligh is a Professor and the Director of the Maryland Power Electronics Laboratory (MPEL) at University of Maryland at College Park (UMD). Prof. Khaligh's major research interests include modeling, analysis, design, and control of power electronic converters for transportation electrification, renewable energies, and wearable electronics. He is an author/co-author of more than 200 journal and conference papers, and a recipient of various awards and recognitions including the 2022 IEEE PELS Vehicle and Transportation Systems Achievement Award, 2020 Nagamori Award, 2019 Outstanding Systems Engineering Faculty Award, 2017 Overall Invention of the Year Award from Office of Technology Commercialization at UMD, three Best Vehicular Electronics Awards from IEEE Vehicular Electronics Society, and 2010 Ralph R. Teetor Educational Award from Society of Automotive Engineers (SAE), among many others. Prof. Khaligh was the General Chair of the 2016 IEEE Applied Power Electronic Conference and Expo (APEC), and the General Chair of the 2013 IEEE Transportation Electrification Conference and Expo (ITEC). He is currently the Deputy Editor-in-Chief for IEEE Transactions on Transportation Electrification (TTE).

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Mohammad Hossein Nabian

Associate Professor
Tehran University of Medical Sciences

ReACT 2023

Abstract

In recent decades, trans-disciplinary research has greatly influenced and improved our attempts at answering complicated solutions and overcoming challenges once deemed impossible. During the last couple of centuries as different branches of science became more and more specialized, a common language and understanding necessary for collaboration was lost and each specialty began looking at problems with a progressively narrower field of vision. Simultaneously, as the challenges we were trying to solve became increasingly more difficult and complex, such a collaboration found new significance and importance. The field of medicine has been no exception in this regard and as treatment methods and tools become more advanced, a trans-disciplinary approach to solving them proves necessary. As the president of the Center for Orthopedic Trans-disciplinary applied Research (COTAR), our mission has always been to include such an approach in our research in different branches of orthopedic surgery. Our projects range from designing surgical simulators in collaboration with robotic and industrial-design engineers to tissue regeneration research involving a wide spectrum of medical specialties and even artificial intelligent projects in partnership with data scientists and programmers. COTAR aims to act as a base for the creation of a common understanding in orthopedics in a field where sub-specialization has been the norm for a long time and thus has prevented these highly needed collaborations to take seed and grow. As the next step, our team is planning to found "Applied Orthopedics Innovation Center" in order to develop ideas for possible commercialization in a start-up environment.

Biography

Hossein is an associate professor of orthopedics at Tehran University of Medical Sciences (TUMS) and is the founder and current president of COTAR, a TUMS based research center focusing on trans-disciplinary research in the field of orthopedics. Bringing together different specialties in order to tackle complex challenges in orthopedics and the field of regenerative medicine has been his dream since long before founding COTAR and he views the center's establishment as neither a start nor end-goal but rather a steppingstone in creating a truly diverse environment in which each problem can be viewed and assessed from different angles. Apart from research, he is also an orthopedic surgeon specializing in pediatric orthopedics and has completed his fellowship in Paris, France. He graduated as a general practitioner from TUMS in 2009 and studied orthopedics in Shariati hospital were he is currently employed.

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Amin Babazadeh

Postdoctoral Researcher
University of Vienna

ReACT 2023

Abstract

"2022 Physics Nobel Prize and Quantum Logic Gates"

"God does not play dice.", this is the famous quote by Einstein who believes that quantum mechanics is not complete and couldn't possibly explain everything about nature. However, physics Nobel Prize laureates in 2022 experimentally proved the Bell inequality and showed that the entanglement is the characteristic trait of Quantum Mechanics. Quantum Logic Gates are one of the basic optical elements which were used in their experiments. In this presentation not only, I will explain what they did to achieve the prize but also I will describe how it is possible to generate high dimensional quantum logic gates and their results on the Quantum technology.

Biography

Dr. Amin Babazadeh received his PhD from the Institute for Advanced Studies in Basic Sciences, Zanjan. His thesis was about the classical and quantum wavelength conversion in the materials with second order nonlinearity. During the PhD, he was in Prof. Anton Zeilinger's group as a visitor and worked on the high dimensional quantum logic gates and high dimensional entangled Bell states. His results in this field have been published in some high impact intranational journals. He has also received the Ali-Mohammadi Prize in 2020. Dr. Babazadeh has continued his research as a Postdoc in Prof. Lorenzo Marrucci's group in Italy for two years. Then, he has joint to the University of Vienna in 2021 and started his second postdoc. Currently, he is also a researcher in Austrian Academy of Science in the Institute for Quantum Optics and Quantum Information.

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Omeed Momeni

ReACT 2023

Associate Professor

UC Davis

Abstract

"Highly Efficient and Compact mm-Wave Transceiver Systems for Tens of Gb/s Communication and High-Resolution Radar Sensing and Imaging in Short-Range Applications "

The mm-wave spectrum offers promising potentials for various applications such as communication and radar. The higher frequency and available bandwidth can significantly increase the data rate and resolution, while reducing the size of the system. However, lower available-gain of the transistors and higher noise contribution from components at these frequencies can increase power consumption and reduce sensitivity. In addition, the existing multi Gb/s communication systems and radars are inherently complicated and require power hungry components such as modem (e.g., ADC/DAC) and low efficiency power amplifiers. In this talk we present system and circuit level techniques to achieve 17 Gb/s data rate with record power consumption at 160 GHz. This is enabled by 4FSK modulation scheme and a novel frequency sharing receiver architecture. Next, we present a low power radar sensor system with record displacement accuracy/sensitivity of tens of nm at mm-wave frequencies. This is achieved by coherent demodulation and signal generation through common-referenced sub-sampling PLLs. Finally, we demonstrate a new phase shifting method based on combining standing and traveling waves and show how it can achieve significantly higher reconfigurability, phase shifting range and bandwidth. Using this method we present coupled-oscillators, scalable radiator arrays, and reconfigurable phased arrays that can produce high resolution images at 450 GHz.

The proposed structures can be used in battery powered and portable systems for applications such as virtual reality, UAV- and Vehicle-to-Things communication, IoT, human vital signs detection, biomedical and agriculture sensing, material analysis, and security screening.

Biography

Omeed Momeni (S'04-M'12-SM'18) received the B.Sc. degree from Isfahan University of Technology, Isfahan, Iran, the M.S. degree from University of Southern California, Los Angeles, CA, and the Ph.D. degree from Cornell University, Ithaca, NY, all in Electrical Engineering, in 2002, 2006, and 2011, respectively.

He joined the faculty of Electrical and Computer Engineering Department at University of California, Davis in 2011 and is currently an Associate Professor. He was a visiting professor in Electrical Engineering and Computer Science Department at University of California, Irvine from 2011 to 2012. From 2004 to 2006, he was with the National Aeronautics and Space Administration (NASA), Jet Propulsion Laboratory (JPL) as a RFIC designer. His research interests include mm-wave and terahertz integrated circuits and systems.

Prof. Momeni serves as an Associate Editor for The IEEE Microwave and Wireless Components Letters (MWCL) since 2021, and a Technical Program Committee (TPC) member of Radio Frequency Integrated Circuits (RFIC) Symposium since 2018. He has also served as a Distinguished Lecturer for Solid-State Circuits Society (SSCS) in 2020-22, an Associate Editor of Transactions on Microwave Theory and Techniques (TMTT) in 2018-20, a Steering Committee Member (2020) and Technical Program Review Committee Member (2017-20) of the International Microwave Symposium (IMS), an organizing committee member of IEEE International Workshop on Design Automation for Analog and Mixed-Signal Circuits in 2013, and the chair of the IEEE Ithaca GOLD section in 2008-11. Prof. Momeni is the recipient of UC Davis Graduate Program Advising and Mentoring Award in 2022, National Science Foundation CAREER award in 2015, the Professor of the Year 2014 by IEEE at UC Davis, the Best Ph.D. Thesis Award from the Cornell ECE Department in 2011, the Outstanding Graduate Award from Association of Professors and Scholars of Iranian Heritage (APSIH) in 2011, the Best Student Paper Award at the IEEE Workshop on Microwave Passive Circuits and Filters in 2010, the Cornell University Jacob's fellowship in 2007 and the NASA-JPL fellowship in 2003.

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Iman Askarian

ReACT 2023

Postdoctoral Researcher
University of Calgary

Abstract

There has been a trending shift towards using electric road transportation in the past few years due to the growing public interest among customers and improvements in technologies. In this talk, I will describe electric vehicles's history, importance, development, and impact. The technological operation of electric vehicles will be explained based on their electric propulsion subsystems. Different EV architectures, drivetrain configurations, and their usage will be provided. The power electronics, including onboard battery chargers, drives, and their control systems, will be explained. Some aspects of novelties in power electronics and control will be given.

Biography

Iman Askarian received his B.Sc. degree in electrical engineering from Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran; his M.Sc. degree in electrical and computer engineering from Queen's University, Kingston, ON, Canada; his Ph.D. degree in electrical engineering-power electronics from University of Calgary, Calgary, AB, Canada. He served as a postdoctoral scholar at the University of Calgary. He has collaborated with Delta-Q Technologies Corp. for the design and development of single-stage ac–dc converters in battery charging applications for low-voltage electric vehicles. His research interests include power electronic converters and their digital control techniques in electric vehicles, solar, energy storage systems, and microgrids. He has 4 US and UK patents and is the recipient of numerous awards, such as the IEEE Southern Alberta Research Award, the Faculty Teaching Excellence Award from the University of Calgary, and the Alberta Innovates Graduate Student Scholarship Award.

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Mohammad Hossein Rohban

Assistant Professor
Sharif University of Technology

ReACT 2023

Abstract

We aim for image-based novelty detection. Despite considerable progress, existing models either fail or face dramatic drop under the so-called "near-distribution" setup, where the differences between normal and anomalous samples are subtle. We first demonstrate existing methods could experience up to 20% decrease in their AUCs in the near-distribution setting. Next, we propose to exploit a score-based generative model to produce synthetic near-distribution anomalous data. Our model is then fine-tuned to distinguish such data from the normal samples. We make quantitative as well as qualitative evaluation of this strategy, and compare the results with a variety of GAN-based models. Effectiveness of our method for both near-distribution and standard novelty detection is assessed through extensive experiments on datasets in diverse applications such as medical images, object classification, and quality control. This reveals that our method significantly improves upon existing models, and consistently decreases the gap between the near-distribution and standard novelty detection AUCs by a considerable amount.

Biography

Mohammad Hossein Rohban received his B.Sc., M.Sc., and Ph.D. degrees in Software Engineering from Sharif University of Technology, Tehran, Iran, in 2006, 2008, and 2012. His B.Sc. project was "Focused crawling on web". His major was Artificial Intelligence during his Master Program and he was working on "Face Recognition in Low Quality Videos". During Ph.D. Program, his main focus was on Machine Learning. His thesis was about "Semi-Supervised Kernel Learning for Pattern Classification". He was working on different topics in Machine Learning during 2012-2014 as a Postdoctoral Research Associate at Boston University. He worked as a part-time lecturer at Rochester Institute of Technology, New York Area in 2013-2014. He was a Postdoctoral Associate at Broad Institute, Cambridge, MA, in 2015-2018. From then on, he is an Assistant Professor at Sharif University of Technology, Department of Computer Engineering. He also works at Robust and Interpretable Machine Learning Lab, and Bioinformatics and Computational Biology (BCB) Lab at Sharif.

Dr.Rohban is a Machine Learning Scientist/Practitioner with 18 years of combined experience in industry and academia. Specifically, He has worked on many different types of data ranging from video and images to text documents and financial time series. His expertise includes development of various types of Machine Learning and Data Analysis tasks, such as Classification, Clustering, Latent Variable Modeling, and Multi-task Learning. His research interests include Microscopy and Medical Image Analysis, Robust and Interpretable (Deep) Learning, Computer Vision, Reinforcement Learning, and Machine Learning for Network Data Analytics.

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Mohammad Khosravi

ReACT 2023

TU Delft **Assistant Professor**
Delft University of Technology

Abstract

Complex Dynamical Systems are omnipresent in science and technology, such as district heating networks, large-scale energy systems, networked robotic systems, and autonomous deriving. Being in the era of data, various machine learning (ML) ideas are proposed for their modeling and control. While ML tools aim to learn suitable models from measurement data to be used later in real-world applications, they become significantly inefficient and intractable when the system or environment is subject to high uncertainties, significant complexity, or considerable variations. Meanwhile, despite the ML generic context, the above-mentioned complex systems commonly have specifically known physical, structural, or system-theoretic characteristics. Now, one may ask whether we can use the given side information to improve learning and control schemes.

Biography

Mohammad Khosravi received a B.Sc. in electrical engineering and a B.Sc. in mathematical sciences from the Sharif University of Technology, Tehran, Iran, in 2011. He obtained a postgraduate diploma in mathematics from ICTP, Trieste, Italy, in 2012. He was a research assistant in the mathematical biology group at Institute for Research in Fundamental Sciences, Tehran, Iran, during 2012-2014. He received his M.Sc. degree from Concordia University in 2016 and his Ph.D. degree from ETH Zurich, in 2021, both in electrical engineering. After several months of post-doctoral fellowship at the urban energy systems group, Swiss Federal Laboratories for Materials Science and Technology (EMPA), Zurich, he joined Delft Center for Systems and Control (DCSC) as an assistant professor. He has won several awards, including the National Mathematics Olympiad gold medal, the Outstanding Student Paper Award in CDC 2020, the ETH Medal, and the Outstanding Reviewer Award for IEEE Journal of Control Systems Letters. His research interests include various theoretical and practical aspects of data-driven and learning-based modeling, model reduction, control & optimization methods, and their applications in thermodynamics, buildings, energy, and industrial systems.

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Skyroom

ReACT

Sanaz Sabzevari

ReACT 2023

Postdoctoral Researcher
KTH Royal Institue of Technoloy

Abstract

Virtual try-on (VTON) eliminates the need for in-store trying of garments by enabling shoppers to wear clothes digitally. For successful VTON, shoppers must encounter a try-on experience on par with in-store trying. We can improve the VTON experience by providing a complete picture of the garment using a 3D visual presentation in a variety of body postures. In this talk, I will demonstrate the recent outcomes of the VTON platform using generative models. Our proposed framework aligns in-shop clothes to the desired garment on the target pose by optimizing a consistency loss. We address the problem of generating fine details of clothes in different postures by incorporating multiscale feature maps. Besides, we propose a coarse-to-fine architecture to remove artifacts inherent in 3D visual presentation. Our empirical results show that the proposed method is capable of generating 3D presentations in different body postures while outperforming existing methods in fitting the fine details of the garment. My master's student also continues this work by editing fashion items using generative adversarial network inversion with disentangled representation. This work helps eliminate a fair amount of online shopping returns due to a mismatch in style, size, and body shape in online shopping markets.

Biography

Sanaz Sabzevari received the B.Sc. and M.Sc. degrees from the Ferdowsi University of Mashhad, Mashhad, Iran, in 2010 and 2013, respectively, and the Ph.D. degree in control engineering from the Malek Ashtar University of Technology, Tehran, Iran, in 2020. She had been a visiting scholar at Aalborg university for roughly one year during Ph.D. studies. She was a co-founder of Samaro's startup for two years. It was awarded at the Entrepreneurship and Innovation Competition, Research and Technology, in 2019. She is currently a Postdoctoral Researcher with the Robotics, Perception, and Learning Division at KTH University of Technology, Stockholm, Sweden. Her research interests include generative models, machine learning, computer vision, nonlinear observer, attitude estimation, robotics, renewable and sustainable energy, and control.

Kousha Kalantari

ReACT 2023

Applied Scientist
Amazon Web Services

Abstract

The advertisement industry is one of the sectors most impacted by the integration of artificial intelligence into the global economy. Through the use of machine learning algorithms, tech companies such as Google and Meta have generated substantial revenue by identifying the audience most likely to respond positively to specific advertisements. This efficiency is contingent upon proper access to relevant data. However, the growing awareness regarding the importance of protecting individual privacy while still allowing for effective customer targeting has become a challenging issue. Regulations such as the European General Data Protection Regulation (GDPR) and California Consumer Privacy Act (CCPA) attempt to address this concern by enforcing guidelines on data protection. During this presentation, the challenges posed by this issue will be thoroughly explored and potential solutions to the problem will be discussed, along with the inherent challenges in implementing these solutions. It is important to note that all information presented in this talk is based solely on publicly available sources. (Written by ChatGPT)

Biography

Kousha Kalantari obtained his Bachelor's degree in Electrical Engineering from Sharif University of Technology in 2013 and later went on to earn his Master's degree in the same field from Arizona State University in 2016. He then continued his studies at the California Institute of Technology, where he is currently a Ph.D. candidate on a leave of absence. During his academic career, Kousha has researched information theoretic privacy, causal source coding, statistical learning theory, and high dimensional probability theory. In 2019, he transitioned to the industry and has since worked on AI applications in recommender systems, including natural language processing and advertising. At Meta (formerly Facebook), he was involved in mobile app ads delivery systems, and now at Amazon AWS AI Labs, his research covers various domains of AI in recommender systems and privacy-preserving machine learning. (Written by ChatGPT)

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