DSSE *In Focus*

The Dhanani School of Science & Engineering,
Habib University Newsletter

HABIB UNIVERSITY
DHANANI SCHOOL OF SCIENCE AND ENGINEERING

MESSAGE FROM THE DEAN

It is my great pleasure to present to you the inaugural issue of the DSSE newsletter. Through it, we aim to highlight the significant happenings and developments at DSSE during the period from Spring 2020 to Spring 2021.

This newsletter has taken long to materialize. A lot happens in DSSE all the time: invited talks, course projects, publications, public lectures, student achievements, and so on. Just the prospect of capturing all of it in a concise newsletter is daunting. Accounting for the time taken for design and editing, no sooner is the newsletter released than you realize that you missed something in the interim. Another challenge is selection - we could fill pages just reporting on our course projects. What do we cover and more importantly, what do we *not* cover?

Thanks to the OAD coordinator, Aala Siddiqi, and a team of dedicated Work Study students, we have coordinated for this issue with the program directors to cover a limited time period. We do not claim to be complete just yet. Rather, we hope for this newsletter to become a regular feature, annual at first and then semesterly. Once that happens, we will become adept in covering more school events and developments.

As you browse the following pages, you will learn about updates in the school faculty and leadership, our response to the pandemic, our public lectures and alumni talks, IAB activities, WiCSE's activities, new course offerings and projects, invited talks, our minors, our farewells, and our academic achievements. Some of these may not be news to you but given the sheer amount and diversity of the events, we are sure that at least a few will pleasantly surprise you!

Dr. Waqar Saleem
Assistant Dean, Associate Professor, DSSE

NEWSLETTER OUTLINE

1. Message from the Dean.
2. Braving the Pandemic
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5. Events
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BRAVING THE PANDEMIC

Illustrations: CANVAS

2020 - 2021 was a year of unprecedented challenges. With the onset of the COVID-19 pandemic, the university transitioned to online learning. To give both faculty and students time to adjust to this change, and familiarize themselves with online teaching tools, the university took strategic pauses in March and May. These pauses provided the university the opportunity to reflect on the few weeks of online learning and teaching, go back to the drawing board, and try to create an online environment more conducive to learning.

APPROACH

A three-pronged approach was adopted to ensure a smoother learning and teaching experience for students and faculty alike. First and foremost was the need to improve pedagogy within an online environment that did not compromise on any of the course learning outcomes. The second aspect centered around rethinking assessments, while the final concern was in regards to the accommodations required to ensure that each student is at a level playing field in terms of access to all online platforms now essential to continue learning.

NORMS, CULTURE AND TOOLS FOR ONLINE LEARNING

From Fall 2020, Habib University acquired licenses to various online platforms. A shift to Canvas LMS coupled with classes now being held on Zoom allowed faculty greater flexibility in changing their assessment methods. The introduction of the Student Engagement Level (SEL) policy in place of class attendance ensured that no student was left behind due to technological barriers, shifting the focus from live, in-class participation to asynchronous activities on Canvas.

Courses such as Digital Logic and Design (DLD) and Electrical Circuit Analysis (ECA) which require students to design and build final projects were now taught via Tinkercad, Vivado, and Pspice. Thus, students could test their designs virtually.

TRAININGS, WORKSHOPS AND THE FUTURE OF LEARNING

The university also launched various initiatives to provide faculty support such as faculty trainings for new learning platforms, course clinics, and community learning platforms. Misaal Afrozi sessions were initiated as part of a series of talks focusing on assessment design, execution and administration. Design thinking workshops around the future of learning were also conducted.

LEADERSHIP ANNOUNCEMENTS

The academic year of 2020 - 2021 saw many members of the DSSE community stepping into new leadership positions.

DSSE ASSISTANT DEAN

Dr. Waqar Saleem was appointed as the new DSSE Assistant Dean on March 1st, 2020. Dr. Waqar has been with Habib University since 2012, previously having served as the Program Director for Computer Science. He continues to teach in the Computer Science department as an Associate Professor.

PROGRAM DIRECTORS

The school also welcomed three new Program Directors, with Dr. Abdul Basit Memon taking charge of the Electrical and Computer Engineering program, Dr. Humaira Qureshi of the Integrated Sciences and Mathematics (iSciM) program, and Dr. Ayaz ul Hassan Khan of the Computer Science program.

Dr. Waqar Saleem	Dr. Abdul Basit Memon	Dr. Humaira Qureshi	Dr. Ayaz ul Hassan Khan
Assistant Dean, Associate Professor, CS - DSSE.	Program Director & Assistant Professor, ECE.	Program Director & Assistant Professor, iSciM.	Interim Program Director & Assistant Professor, CS.

New Faculty Members

DSSE welcomed the following new faculty members:

Dr. Abdullah Bajwa, Assistant Professor, Electrical and Computer Engineering

Dr. Aeyaz Kayani, Assistant Professor, Integrated Sciences and Mathematics (iSciM)

Dr. Ahmed Umer Ashraf, Assistant Professor, Integrated Sciences And Mathematics.

Ms. Maria Samad, Lecturer, Computer Science

Dr. Muhammed Umer Tariq, Assistant Professor, Electrical and Computer Engineering

Dr. Muntazir Mehdi Abidi, Distinguished Visiting Faculty member, Integrated Sciences And Mathematics.

Dr. Mobeen Movania, Assistant Professor, Computer Science.

NEW LABS & LICENSES

INAUGURATION OF PROJECTS LAB

As a place for senior year students to collaboratively and efficiently work on their Final Year Projects, Projects Lab was inaugurated in Fall 2020. Equipped with all the tools that they might need, this lab aims to aid DSSE students in the ideation, execution, development and debugging of their projects.

MATLAB LICENSE

Matlab and its Simulink toolkit are widely used across DSSE course, especially ECE. In line with remote access during the pandemic, the school has deployed **MATLAB and Simulink Anywhere Access** for its students and faculty which permits the installation of MATLAB, Simulink and additional products for analysis, design, modelling, simulation, code generation, and testing and immediate access to new releases on campus-managed as well as user-owned computers. Through this deployment, the school asserts its commitment to continuously enhance its learning tools, methodologies and resources.

EVENTS

DSSE PUBLIC LECTURE SERIES

The DSSE Public Lecture Series provides a platform for the school to engage renowned professionals and academics to share their ideas on a wide variety of interesting subjects, and to contribute to thoughtful public discourse. More than eighty lectures have been delivered so far as part of this series, with the following conducted last year.

SMARTPHONES FOR CLINICAL DIAGNOSTICS!

ECE faculty member, Dr. Ahmad Usman, explored the use of smartphones for clinical diagnostics, especially in the context of developing and resource-limited countries.

COMPUTER GRAPHICS, COMPUTER VISION AND IMAGE PROCESSING: INTERCONNECTS AND APPLICATIONS

In this talk, CS faculty member, Dr. Muhammad Mobeen Movania, introduced three main domains of computer science: computer graphics, computer vision and image processing.

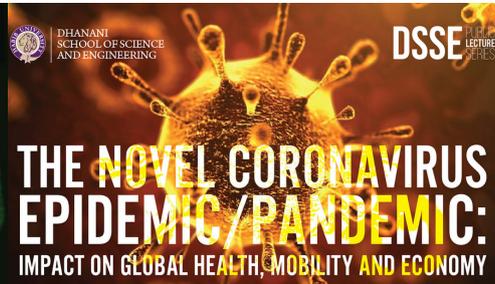## ONLINE SYMPOSIUM ON ELECTRIC VEHICLES: CHALLENGES AND PROMISES

This two-part talk by ECE invited industry representatives to present the motivation, background, and benefits of EVs in Pakistan and share how an EV industry can be developed in the country.

GRAPHENE BASED COMPOSITES & HYBRIDS AND THEIR APPLICATIONS

Dr. Yarjan Abdul Samad from Cambridge Univeristy discussed the production of GRMs, the development of graphene-based composites, aerogels and coated electronic textiles, and the current and impending applications of graphene-based components.
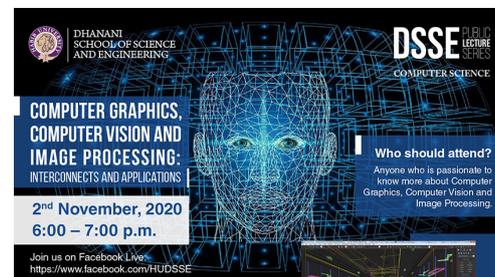
THE NOVEL CORONAVIRUS EPIDEMIC/PANDEMIC: IMPACT ON GLOBAL HEALTH, MOBILITY AND ECONOMY

At a time when only suspected Coronavirus cases were being reported in Pakistan, this talk and panel discussion invited local health practitioners and scholars to discuss how vulnerable the population in different cities of Pakistan is to the disease and how prepared the country is to manage this infection .

THE NETWORKS FORMED ON THE FLY!

Dr. Aamir Hasan from the ECE faculty focused on how stochastic geometry tools can be employed to get insight into the design of scheduling algorithms in ad hoc networks while also elaborating on how post-MAC geometrical distribution of nodes is important for the efficient design of MAC protocols.

OPPORTUNITIES OF GROWTH IN THE ENGINEERING SECTOR OF PAKISTAN

This panel discussion involved professionals and scholars in the field of engineering and focused on the surplus labor produced by the Engineering Industry Development Sector (EIDS) and how the high unemployment rates of young engineers have resulted in a waste of human capital, missed opportunities and pessimism about the future, discouraging students from pursuing engineering. The panelists shed light on the rapidly changing times and industry needs, and how this requires us to rethink engineering education and to view engineering in a more holistic manner.

DSSE ALUMNI TALK SERIES

The DSSE Alumni Talk Series invites alumni to share their experience at Habib University, learnings from their professional life, and how one shapes the other.
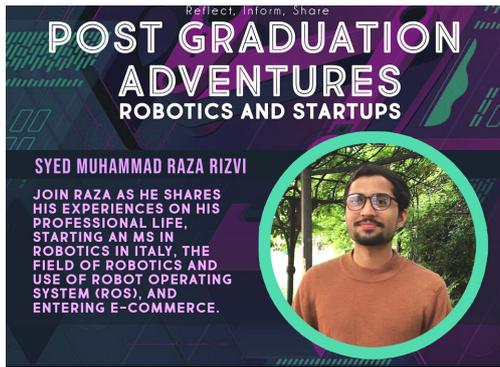
ROBOTICS AND STARTUPS

In the inaugural talk, Syed Muhammad Raza Rizvi (EE 2018) illuminated current students on life after graduation, using his own journey as an example which included a stint as a Research Assistant at HU, pursuing a Masters in Robotic Engineering in Genova, Italy, and ventures in e-commerce. The session was well received by students who found it a great learning opportunity while offering them clarity for their plans after graduation.

HCI AND VIRTUAL REALITY

Ramsha Saad Thaniana (CS 2019) is completing her Masters in Human Computer Interactions (HCI) from the Bauhaus Universität Weimar where she is also a Student Assistant in the Virtual Reality and Visualization Research Group. She is also a Global Lead for Ambassadors for Pakistani Women in Computing (PWiC) and teaches coding to children as an online coding instructor at codeschool.pk. In this session she elaborated on the intricacies of HCI and how her time at Habib prepared her for her post grad journey.

WINTER WORKSHOP

In December 2021, Habib University hosted its First Winter School on Computer Vision (CV). This was an intensive, week-long workshop organized by the Electrical and Computer Engineering program. Its aim was to orient STEM seniors to CV with an aim to help them in using CV in their capstone projects. The workshop was conducted by two HU alumni, Syed Talal Wasim (EE 2019) and Syed Nouman Hasany (EE 2019) with a keynote delivered by Dr. Zeeshan Zia, CEO and Co-Founder of Retrocausal AI.

CAREER FAIR

The Office of Career Services organized **Connect 2021** on the 13th of February allowing students the opportunity to network with various organizations from industries such as IT, banking, pharmaceuticals, power and energy, technology, and finance. The expansive catalogue of companies ensured that there were job and internship opportunities for students of all three majors, with notable participants being Dawlance, Careem, US Mobile, Engro, Stellic, Zepcom, Cloud Primero and start-ups including Dvago and NayaPay. Furthermore, exceptional student group projects were also on display for the employers to witness the best of what Habib University has to offer. A number of Habib alumni also attended the fair, this time representing their employers.

DSSE LOUNGE

DSSE Lounge is a biweekly meetup, held outdoors on campus, with the aim of creating a strong and closely knit community. It gives DSSE faculty and staff the chance to unwind and get to know each other over tea and snacks at the end of the week.

VISIT TO DAWLANCE

A team from DSSE consisting of the Assistant Dean and faculty members visited Dawlance and were given a tour of their Research and Development Facility as well as the DPL-1 and DPL-2 plants. Internship and work opportunities for students, and plans to increase collaboration between academia and industry were discussed.

FOSTERING STRONG INDUSTRY - ACADEMIA PARTNERSHIPS THROUGH THE DSSE INDUSTRIAL ADVISORY BOARD

A meeting with the DSSE Industrial Advisory Board, which provides an industrial perspective on future directions and strategies for the School and promotes the School among local and international industry, was held in March 2021.

DSSE IAB MEMBERS

WiCSE

Women in Computer Science and Engineering (WiCSE) is an initiative at Habib University which aims to address and understand the disproportionate representation of women in the fields of Computer Science and Engineering, and to empower and celebrate the women in its student body. Some of the initiatives taken by WiCSE in 2020 - 2021 are as follows:

Aitemad: Women in Tech and Beyond Conference

Aitemad was a 2-day Virtual Conference fro held on the 6th and 7th of August 2020 by WiCSE and WiSE, the student club, to celebrate and empower women in STEM. Experienced women representing STEM academia and industry from across the world delivered talks and participated in panels and mentorship circles. The conference also showcased projects by DSSE's talented female students.

Women in STEM Design Research Project

WiCSE launched a Design Research Project in March 2021 with HU's centre for transdisciplinarity, design and innovation, the Playground. Using a range of design research methodologies, this project aims to explore, map and document the representation of women in STEM fields, identify reasons and the barriers that women face in pursuing these fields especially in South Asian contexts, and eventually develop a framework to address these issues.

Women's day

DSSE continued its tradition of celebrating International Women's Day with a cake cutting ceremony for its female faculty, students and staff. Dr. Humaira Qureshi from iSciM brought a surprise guest!

INNOVATION AND INTERDISCIPLINARITY

1. **COURSES AND MODULES**

   To provide an interdisciplinary learning experience, DSSE offers innovative courses which focus on hands on learning, real world exposure, interdisciplinarity, and community engagement.

BIO 114: BIODIVERSITY IN THE CITY

This course explores how urbanization as a process affects the physiology, behaviour and evolution of ecosystems.

BIO/CND 150: BIOSCIENCE IN CINEMA

This course intends to mitigate the dichotomy between science and the arts. The underlying theme of the course is to learn different aspects of biology through a popular medium of creative expression, in this case selected films on scientific topics.

MATH 106: MUSIC AND MATHEMATICS

This course serves as a bridge between two areas of learning that are not popularly associated with each other. However, music and its development in various cultures around the world have often relied upon mathematical frameworks. The study of mathematical concepts behind musical ideas is a classic example of interdisciplinary learning in the liberal arts model.

BIO 103: GLOBAL HEALTH AND DISEASE

This course explores health issues that cross national boundaries and disciplinary confines.

ENVS/SDP 251: WATER: SCIENCE, SOCIETY, AND POLICY

In this three-part course, students are first introduced to hydrological processes in the environment. Next, they focus on how various societies interact with the environment around them and in so doing, how they alter the hydrology around them. Finally, in the third part, students learn about various stakeholder perspectives on Karachi's water system.

EE 391: ENGINEERING DESIGN & INNOVATION

This course aims to cultivate skills needed to produce great designs, be a more effective engineer, and communicate with high emotional and intellectual impact. Students come to appreciate that a design problem involves multiple stakeholders, come to terms with the ambiguity that shows up in design problems, handle uncertainty, think as part of a team, and communicate their design effectively.

KHIDMAT INTERNSHIP

The Khidmat module in the Computer Science program is an attempt to make students engage with society and help make some meaningful contribution using the (computer science) skills they've learnt so far. As part of this module, students have worked with organizations such as The Indus Hospital, Akhuwat (NJV), Govt. Elementary College of Education, Karachi Down Syndrome Program (KDSP), SOS Children's Village - Jamshoro, and more.

ECE INTERNSHIP

Many EE students engage in optional internships during their summer breaks. In a competitive and constantly evolving job market, internships are a great opportunity for students to apply their learning and skills, network, and gain perspective. Students interned at diverse organizations, including KPMG, Atlas Honda, AKU EDU Department, HUB Power Services (Ltd), and Islamabad Institute of Space Technology.

2. TALKS AND DISCUSSIONS

Instructors make an effort to engage external academics and professionals from diverse fields to deliver talks and conduct sessions in their classes. This helps promote the exchange of ideas in an intellectually stimulating environment,

MODERN ENERGY LANDSCAPE AND ITS CHALLENGES

In this Electrical Engineering junior seminar, Mr. Sohaib Anwer discussed the changing landscape of the energy industry and the engineering challenges associated with the commercialization of renewable energy.

GUEST LECTURE IN ENGINEERING INNOVATION AND DESIGN BY DR. LESLEY ANN NOEL

Dr. Lesley in her talk discussed different models of design thinking. The talk was followed by an interesting Q&A session in which students discussed their projects and the problems they were facing.

THE IOT WORKSHOP (DEVELOPING AN INTERNET OF THINGS BASED PERSONAL ASSISTANT)

The first module of the workshop focused on understanding basic concepts, operation and hands-on experience, while the second module was about IoT Projects implemented by Students.

BIOLOGICAL OXYGEN DEMAND OF ORGANIC WASTE IN RIVERS

This guest lecture was delivered by Dr. Arthur Kney (Professor Environmental Engineering, Lafayette College).

TREATMENT METHODS TO REMOVE CORONAVIRUSES FROM DRINKING WATER

This guest lecture was delivered by Dr. Joseph Goodwill (Assistant Professor Environmental Engineering, University of Rhode Island)

DEVELOPING ELECTRICAL ENERGY FROM HUMAN WASTE IN GHANA

This guest lecture was delivered by Dr. Caitlyn Butler (Associate Professor Environmental Engineering, University of Massachusetts Amherst)

PANEL DISCUSSION ON WATER: SCIENCE, SOCIETY, AND POLICY

Dr. Nausheen Anwar (Professor and Head of KUL, IBA), Basharat Saeed (Water Resources Specialist, World Bank), and Shakil Qureshi (Project Director, KWSB) participated in a panel discussion with students regarding the current water management challenges in Karachi.

NEO4J SESSION BY MR. ANDREAS KOLLEGER

In this session, Mr. Kolleger shared how Neo4j, a graph database, focusing on the relationships between data-points, rather than on the values themselves, graphs are perfect for those big, messy, and connected data sets. This is something that SQL databases simply can't do easily.

AN OPEN SOURCE MICROPROCESSOR DESIGNING INITIATIVE IN PAKISTAN

This talk, delivered by Dr. Ali Ahmed, Team Lead - Micro Electronics Research Lab at the UIT, was about ecosystem development for RISC-V, and covered the design and implementation of a curriculum to teach undergraduate students digital logic design

3. SELECTED STUDENT PROJECTS

Projects provide students hands-on experience and help them realize the abstract concepts covered in class. A number of courses culminate in exciting and creative final projects.

DLD Arcade Machine Fall 20

Students of Digital Logic and Design (DLD) course in Fall-20 designed a basic framework of arcade setup to run, test and play games developed in Arcade Machine. The motive behind development of this setup was to keep the setup open to the HU community as a source of entertainment as well as inspiration to modern digital design. Design team included Sameer Pervez (CS), Muhammad Aqib Khan (EE), Mohammad Hasan Tariq (CE), Yabudullah Ahmed Bakhtiar (EE).

GPU Accelerated Computing

As part of this course, students developed interdisciplinary projects such as applications of accelerated computing in the area of computational physics, and Image processing. The details of the projects and final reports can be seen at

NEW MINORS AT HU

Electrical & Computer Engineering Minor (ECE)

The increasingly blurring boundaries between various disciplines in the present world have made it difficult for students to limit themselves to one area of study. To give students a multidisciplinary educational experience, DSSE launched a fourth minor, The school already offers minors in Physics, Math and Computer Science.
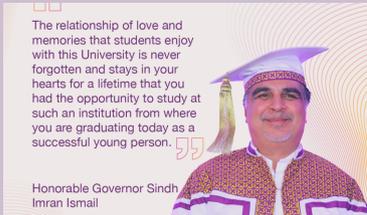
The ECE minor provides an opportunity to students enrolled in other programs at HU to experience the extensive breadth within ECE. The minor has been designed such that the students have reasonable academic preparation in terms of the foundations of ECE, but then have the option to create their own path through the different concentrations within ECE, including Communications, Power and Energy, Signal Processing, Control and Robotics, Analog Circuits, Digital Circuits, Electromagnetics, and Embedded Systems.

Other minors that DSSE students can take advantage of include Comparative Literature, Philosophy, Religious Studies, History, South Asian Music, Communication and Design, and Social Development & Policy.

GRADUATING BATCHES OF 2020 & 2021

Amidst the pandemic, Habib University's third and fourth batches of students graduated with a virtual convocation ceremony. DSSE announced awards for the graduating batch to recognize their exceptional academic achievements. Efforts of other members of the DSSE Community such as faculty, teaching and research assistants, volunteers, and event leads were also recognized. The school is proud to note that despite the difficult conditions in which the batch graduated, most students have secured excellent placements in top tier organizations. A number of students have also gone for higher studies in renowned institutions like Carnegie Mellon University, McMaster University and the Technical University of Munich.

The relationship of love and memories that students enjoy with this University is never forgotten and stays in your hearts for a lifetime that you had the opportunity to study at such an institution from where you are graduating today as a successful young person.

Honorable Governor Sindh
Imran Ismail

Wasif A. Rizvi
President
Habib University

RESEARCH PUBLICATIONS 2020 - 2021

Below are the research publications by DSSE faculty from the period from Spring 2020 to Spring 2021.

NAME	PROGRAM	RESEARCH ACCEPTANCES AND PUBLICATIONS
Dr. Ayaz ul Hasan	CS	Paper titled: "CK-NN: A Clustered K-Nearest Neighbours Approach for Large-Scale Classification" published in Advances In Distributed Computing and Artificial Intelligence Journal (ADCAIJ), Vol 8, No. 3.e
		Article "Classification of multi-lingual tweets, into multi-class model using Naïve Bayes and semisupervised learning," published in Multimed Tools Appl (2020).
		Paper titled "Feature Selection Optimization in Software Product Lines," Uzma Afzal, Tariq Mahmood, Ayaz H. Khan, Sadeeq Jan, Raihan Ur Rasool, Ali Mustafa Qamar, Rehan Ullah Khan, published in IEEE Access, Volume 8, September 1, 2020:
Dr. Syeda Saleha Raza	CS	Work titled "Neural Style Transfer Based Voice Mimicking for Personalized Audio Stories," which was conducted under her supervision by her students Sami Murtaza, Marina Shehzad, Syeda Maryam Fatima during Kaavish 2019-20 accepted for the 2nd International Workshop on AI for Smart TV Content Production, Access and Delivery (ACM AI4TV 2020).
Dr. Sarah Hasnain	iSciM	Article titled "Anti-predator behaviour of native prey (Daphnia) to an invasive predator (Bythotrephes longimanus) is influenced by predator density and water clarity" published in Hydrobiologia. 838, pages 139–151 (2019) with Dr. Shelley Arnott (Queen's University, Department of Biology).
		Article titled: "A framework for predicting which non-native individuals and species will enter, survive, and exit human-mediated transport," published in Biological Invasions 22, 217–231,
Dr. Humaira Qureshi	iSciM	Article titled "Early Detection and Prevention of Alzheimer's Disease: Role of Oxidative Markers and Natural Antioxidants," published in Frontiers in Aging Neuroscience, Vol.12, Page 231 (with Jamshed Arsalan and Humaira Jamshed)
Dr. Humaira Jamshed	iSciM	Article titled "Early Detection and Prevention of Alzheimer's Disease: Role of Oxidative Markers and Natural Antioxidants," published in Frontiers in Aging Neuroscience, Vol.12, Page 231 (with Jamshed Arsalan and Humaira Qureshi)
		Review article titled "Edible Nuts for Memory," Arslan J, Jamshed H, Khan SF, Kamal MA, Gilani AH, published in Current Pharmaceutical Design, August 2020
		Article titled: "Almond protects the liver in coronary artery disease – a randomized controlled clinical trial," to be published in the Journal of the Pakistan Medical Association, 1-15 (2020). Authors: Humaira Jamshed, Jamshed Arslan, Fatehali 3 Tipoo Sultan, Hasan Salman Siddiqi, Muhammad Qasim, Anwarul-Hassan Gilani
		Article titled "Impact of Intermittent Fasting on Lipid Profile – a Quasi-Randomized Clinical Trial," published in the journal Frontiers in Nutrition (Eating Behavior section) with Ahmed N, Farooq J, Jamshed H, Laghari AH, Siddiqi HS, Meo A and Pasha F
Dr. Hassaan Furqan Khan	iSciM	Co - authored a book chapter in Water security in Pakistan: availability, accessibility and utilisation. In M. A. Watto, M. Mitchell, & S. Bashir (Eds.), Water resources of Pakistan: issues and impacts (pp. 57-78
Dr. Muhammad Moiz Anis	ECE	Article titled "Task Scheduling Strategies for Utility Maximization in a Renewable-Powered IoT Node," (with J. Leithon, L. A. Suárez, and D. N. K. Jayakody), published in IEEE Transactions on Green Communications and Networking, vol. 4, no. 2, pp. 542-555, June 2020, This publication resulted from research collaboration with colleagues at Aalto University (Finland), TOMSK University (Russia) and the Huawei Research Centre (Russia).
Mr. Junaid Ahmed Memon & Dr Muhammad Farhan	ECE	Paper titled "Image processing techniques for fast and accurate estimation of pose of a double pendulum" published in the 14th International Conference on Computer Graphics, Visualization, Computer Vision and Image Processing (23-25 July, 2020). The paper was coauthored with recent HU graduate Muhammad Haris.
Dr. Aamir Hasan	ECE	Paper titled: "Joint power and spectrum allocation for D2D communication overlaying cellular networks" published in the Elsevier Journal of Computer Networks, Nov. 2020. Authors: L J. Mian, Aamir Hasan and M. Danish:
Mr. Tariq Mumtaz	ECE	Paper titled "Machine Learning for Improved Resource Block Detection in 4G LTE Cognitive Radio Networks" was accepted at International Mobile, Intelligent, and Ubiquitous Computing Conference (MIUCC 2021). This paper was co-authored with HU Seniors of Batch 2021, Arsalan Ahmed and Yusuf Moiz

NAME	PROGRAM	RESEARCH ACCEPTANCE AND PUBLICATIONS
Dr. Shafayat Abrar	ECE	Paper titled: "Adaptive Blind Equalization in Impulsive Noise," Shafayat Abrar, Habib University, Pakistan; Azzedine Zerguine, KFUPM, Saudi Arabia; Karim Abed-Meraim, PRISME Lab, France, was accepted and presented online at the IEEE 54th Annual Asilomar Conference on Signals, Systems, and Computers (Nov. 1-5, 2020).
		Acceptance of his paper: "Planar Inverted-F Antennas for Mobile Devices: An Empirical Study of the Resonant Frequency," which will appear in the Proceedings of 2020 IEEE Texas Symposium on Wireless and Microwave Circuits and Systems. This paper was co-authored with his HU student Muhammad Muneeb Shoaib.
		Acceptance of his paper: "Planar Inverted-F Antennas for Portable Devices: An Empirical Study of the Resonant Frequency and Fractional Bandwidth," to appear in the Proceedings of IEEE 13th International Conference on Communications (IEEE COMM2020). The Conference will be held as a virtual conference on June 18-20, 2020. Organized by Politehnica University of Bucharest, Military Technical Academy Ferdinand I, and Electronica 2000 Foundation, Romania. https://comms.ro/. This paper was also co-authored with his student Muhammad Muneeb Shoaib.
Dr. Ishtiyaq Makda	ECE	Paper titled "Comparison of Common-Mode EMI Noise in a Phase-Shifted and Hard-Switched Full-Bridge Forward Converters" accepted for the upcoming 23rd IEEE European Conference on Power Electronics and Applications (EPE - http://www.epe2021.com).
Dr. Ahmad Usman	ECE	Single authored article: "Nanoparticle Enhanced Optical Biosensing Technologies for Prostate Specific Antigen Biomarker Detection" accepted in IEEE Reviews in Biomedical Engineering.
		Paper titled "Deep Learning based Inverse Design of Integrated Silicon Nanophotonic Gratings" accepted for presentation at CLEO / Europe-EQEC 2021 (https://www.cleoeurope.org/world-of-photonics-congress/). The work is a currently on-going as a senior year project by ECE students namely, Hussaina Ali Akbar, Anusha Rehman, Zeeshan Karim, and Syed Hasan Asim.

COMMUNITY CONTRIBUTIONS

DSSE faculty contribute to the their social and academic communities in diverse ways. Below is a list of such contributions from the period from Spring 2020 to Spring 2021.

NAME	PROGRAM	ACHIEVEMENTS
Dr. Abdul Samad	CS	Succesfully launched the HU COVID-19 Dashboard for Pakistan with Sarah Hasnain and their team of HU student collaborators. https://hudashboard-covid19.herokuapp.com/
Dr. Waqar Saleem	CS	Authored a piece titled: "A Culture of Excellence in the Advancement of Knowledge," for Dawn's "Special Report on Reunification Day of Germany."
Dr. Sarah Hasnain	iSciM	Launch of version 2.0 of her COVID-19 Dashboard, which includes a fact checking feature which assesses the validity of information related to susceptibility, transmission and treatment of COVID-19 using peer reviewed evidence as well as city/district specific data for the number of COVID-19 cases (where data is available): http://covid19dashboard.habib.edu.pk/
Dr. Humaira Qureshi	iSciM	Abstract titled: "Antibiotic Susceptibility Pattern of Microbial Pathogens in Meals Assembled on Street Carts of Karachi, Pakistan," accepted for a poster presentation at the American Society for Microbiology's annual conference ASM Microbe 20,
		Abstract titled: "Are there more microbes on your smart devices than on toilet seats?" (with Javeria Samad) accepted for a poster presentation at the American Society for Microbiology's annual conference ASM Microbe 20.
Dr, Hassaan Furqan Khan	iSciM	Awarded funding of his NRPU grant application (as PI) "Improving Urban Water Management: an interdisciplinary application of smart urban infrastructure to study water demand in Karachi," (PKR 20,000,000 over 24 months). The project is funded through a HEC funded grant "Improving Urban Water Management: An interdisciplinary application of smart urban infrastructure to study water demand in Karachi".
Dr. Abdullah Bajwa	ECE	Presented his paper on combustion variability in internal combustion engines at the THIESEL Conference in Spain. A. U. Bajwa, T. Linker, M. A. Patterson, G. Beshouri and T. J. Jacobs, "A Study of Cyclic Combustion Variations at Lean SI Engine Operation Using High-Speed In-Cylinder CO_2 Measurements," in THIESEL, Valencia, Spain, 2020.
Dr. Muhammad Moiz Anis	ECE	Collaboration with Hassaan Khan on the NRPUfunded Project "Improving Urban Water Management: an interdisciplinary application of smart urban infrastructure to study water demand in Karachi." Specifically, Dr. Moiz will be working on designing an IoT based connectivity framework for the deployment of smart-flow meters in Karachi.
Dr. Muhammad Farhan	ECE	Lecture presentations of two research papers: "Vehicle Crash Prediction Using Vision," published with students, Muhammad Haris, Minhaj Ahmed Moin, Farooq Abdul Rehman, and "Human Activity Recognition Through Ensemble Learning of Multiple Convolutional Neural Networks," published with students Narjis Zehra, Syed Hamza Azeem in the Other Machine Learning Applications Session at the 55th Annual Conference on Information Sciences and Systems (https://ciss.jhu.edu/) on Wednesday, March 24, 2021
Dr. Aamir Hasan	ECE	Elected as member of the evaluation panel for the National Grassroots ICT Research Initiative (NGIRI) 2020 that funds selected Final Year Projects for undergraduate students in ICT domain.
		Delivered a guest lecture on "The Art of Writing a Good Thesis," at the Air War College, PAF Base Faisal, 27 August 2020.
		Appointed as a member of the Board of Directors of Meethi Zindagi, (https://wp.meethizindagi.org), a national organization dedicated to improving the lives of children living with diabetes through empowerment, education and support.
		Served as a panelist at the symposium entitled: "Judgments faced by people with diabetes and the role of Medical Fraternity, Academia and Media in addressing it" on 14 November 2020, at the Karachi School of Business & Leadership (KSBL), Karachi.
		Presented on "Stochastic Geometry of Nodes in a Poisson Point Processes for M2M communication Networks" at the 3rd International Conference of Computer Science and Allied Technologies, ICCSAT 2020, held on 15th December, 2020 (online) organized by the Lahore Garrison University