NEWS FOR A BETTER WORLD

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SHAMOON COLLEGE OF ENGINEERING

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The SCE Shamoon College of Engineering Newsletter

Edition 55 | June 2023

What is new?

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MESSAGE FROM THE PRESIDENT

The SCE trains about 15% of all engineers in Israel every year. We are proud of our graduates who are pursuing their future in high-tech companies in Israel and around the world, growing, advancing, and developing projects for a better world.

SCE does, and continues to do, everything to maintain the high academic level enjoyed by our undergraduate and graduate students. The College is now considered an important, significant and prestigious institution with exceptional infrastructures.

I see you as our partners, a partnership from which not only the SCE and its graduates benefit, but society as a whole.

I would like to take this opportunity to call on you to join the SCE Alumni Association and to take part in the organization's host of activities and initiatives.

I wish all of you great success!

Sincerely,

Prof. Semyon Levitsky

SCE President

LEADERS IN RESEARCH

A joyous achievement: an article written by Doron Pasha, an SCE graduate in the Electrical and Electronics Engineering department and currently a PhD candidate under the joint advisors Dr. Isaac August from SCE and Prof. Abdulhaim, was published in the well-reputed scientific journal Laser & Photonics Reviews

A scientific study, the product of collaboration between SCE and Ben-Gurion University of the Negev, was published in the scientific journal Laser & Photonics Reviews, one of the well-reputed journals in the optics and photonics field.

The published article is based on the master's thesis of the engineer Doron Pasha, a graduate of the SCE Be'er Sheva campus Electrical and Electronics Engineering department. Doron is currently a PhD candidate under the joint advisors Prof. Ibrahim Abdulhalim from Ben-Gurion University and Dr. Isaac August from SCE. Doron is listed as the first author among the article's author.

Dr. Isaac August was Doron's final project advisor when he was a 4th year student at SCE, which focused on the neural network processing field. After completing the project with great success, Doron began his master's degree studies at Ben-Gurion University.

Dr. August recounts: "Prof. Abdulhalim is a world-renowned scientist in the optics field in general, and in the field of devices and the optics of liquid crystal displays in particular. One of the problems in computational spectroscopy is the limited imaging speed. Prof. Abdulhalim proposed a multispectral rather than hyperspectral approach to imaging to address specific computational method problems, in order to achieve the sufficient speed needed to track dynamic processes, for example spectral imaging to track heartbeats.

"During his master's degree studies Doron applied a fast, complex computational optical spectroscopy system and demonstrated exceptional experimental results. The combination of computational capabilities which he developed during his bachelor's degree studies with full optics application achieved the breakthrough. In light of the commendable progress of the research and its suitability for expansion as a PhD topic, Doron transferred to PHD studies in a combined track under the joint supervision of Prof. Abdulhalim and myself. We continue forward and expect additional breakthroughs".

We are proud of the academic achievement and confident in your success!

MESSAGE FROM THE RECTOR

Israeli academia is the State of Israel' security net in the world, and one of the cornerstones of its national, economic, social and international resilience. The profession and tools you acquired here, at SCE, will help each and every one of you find employment compatible with your education and abilities.

I am confident that you will know how to apply the tools and knowledge you acquired at SCE wisely, and that you will guide, lead and make an impact with your abilities, enhancing Israeli society and its economy, as our thousands of graduates are already doing. You, our graduates, are the future generation of Israel - the generation that will lead industry and the economy in the coming years and generations to higher summits of achievement.

SCE continues to renew and grow in a range of fields. Our college researchers receive prestigious grants and awards, new study tracks were opened recently, and we are working on opening new tracks - compatible with the character and uniqueness of each campus. Academic conferences and events on societal and environmental issues are conducted at the college on a regular basis, attracting active researchers, social leaders and the general public.

To all the students, I wish you good luck in your studies, and to our new graduates I wish you successful and quick integration in industry.

With warm regards,

Prof. Jehuda Haddad

Rector

The Movement that will Promote Community Initiatives in the City

2nd year students in the Visual Communication department met with community activists in Be'er Sheva and expressed their impressions through video clips and animation • You are invited to the exhibition that !will open at the end of the year

Collaboration between the Visual Communication department, Be'er Sheva Campus, and the Montreal Federation recently brought together students in the 2nd year course "Introduction to Graphic Design in Motion" and community activists in Be'er Sheva's Gimmel neighborhood and old city. The Montreal Federation has been actively involved in the advancement and development of the Negev over the past two decades. The Be'er Sheva municipality Community Social Work department connected between the entities and brought them together.

The students listened to the social workers and community activists, learned about a variety of community initiatives taking place in the municipal spaces, and then expressed their impressions in video clips and animation.

The students learned about several projects, including: the struggle of Gimmel neighborhood residents to preserve the long-standing Orot Cinema and to turn it into a community activity center; the activity of the bicycle repair workshop at Maapilim Park in the neighborhood, which created a community fabric of diverse people who get together around one issue; get-togethers of residents in the old city around growing vegetables and plants and connecting to nature through the activity of Shvuat Ha'adamah (Earth's Promise) organization and the Be'eri

Farm; and activity of the business community in the old city that operate in the evening hours and at night – pubs, galleries and restaurants, in an effort to build a network of relationships that will strengthen the city's leisure area so that it is safer and more inviting.

The students used the impressions, photographs and recordings they gathered from their interactions to create visual messages in motion, in the aim of raising awareness about the community interventions and promoting similar initiatives in the municipal space. The students' works will be displayed at the end of the year in a unique exhibition which will be open to the general public.

The Usability Center Visits the Innovation Course at Assuta Ashdod

Dr. Adi Katz, director of the Usability Center, and Yana Sofia, the Center's laboratory engineer, presented the Usability Center to the course participants and discussed directions for collaboration with some

In March, Dr. Adi Katz, director of YOUsability, the Usability Center in the industrial Engineering and Management department, Ashdod campus, and Yana Sofia, the center's laboratory engineer, were invited to present the Center to the Innovation course at Assuta Ashdod Hospital, headed by Dr. Gil Levy. The Innovation course participants are physicians, nurses, researchers, technology personnel, administrative personnel and others from Assuta and additional institutions in Israel.

We presented the Usability Center's activity, the projects for the characterization and design of select interfaces and studies in this field. We were happy to discuss the topics we like: usability, user experience and user empowerment. We told the Innovation course participants about the design projects carried out with students at the Center, as part of their final projects, and our plans for the design of user empowering interfaces in collaboration with Dr. David Gallula, Head of the UED Research Institute for User Empowerment. We demonstrated the use of an eye tracker device and even played a game designing medical icons.

We were happy to meet the course participants, and to discuss directions for collaboration with some.

The School of Architecture Presents:

Groundbreaking Initiative to Automatically Transport and Sort Household Waste

Students from the School of Architecture presented a groundbreaking initiative in which sorted household waste will be automatically transported through an infrastructure of pipes to the sorting facility • The initiative was presented as part of a joint effort to create an environmental impact and a greener future in the Negev

A group of students from the School of Architecture, Be'er Sheva campus, presented a groundbreaking plan to change the way waste is handled in the Negev. According to the plan, which was prepared as part of a collaboration project with the Dudaim Recycling and Environmental Education Park in the Negev, the waste will be separated at source in the residents' homes, and will be carried automatically, through a network of pipes, to the advanced sorting facility at Dudaim Park.

The students Dor Edelshtein, Lior Attias and Ilanit Mankhaimov formulated a detailed plan, including simulations of the new pipes and their deployment through the streets and homes in the Ramot neighborhood in Be'er Sheva. The plan will serve as a model that can be implemented going forward in additional areas in Israel. The project aims to change the habitat in the Negev and to create a continuum between the city and the sorting facility at the waste handling site. The students propose a series of additional steps, among them creating a walking route connecting the city and Dudaim Park for use of employees and the general public, rejuvenation of the Dudaim stream that passes in the area, and community development of agricultural areas between the city and the park.

The project is the product of a School of Architecture program in which groups of students joined together with leading organizations in the Negev to formulate projects that will change the living environment in the area. The Dudaim Recycling and Environmental Education Park in the Negev immediately mobilized after hearing about the plan, and invited the students to tour the Park and learn about the planning challenges posed by the waste crisis and possible solutions that involve the community.

As part of the project, Dr. Ray Vulkan, scientific development manager at Bnei Shimon Economic Corporation, came to SCE to give the students an overview of current research about construction waste, compost and other topics. Also, to enable the students to formulate a plan with engineering feasibility, Dudaim Park provided environmental engineering consulting, headed by the Ein Gedi Oasis from the Nimrod Halamish Consulting firm. Dudaim Park management also helped another group of students that planned houses from recycled materials.

Dr. Galia Limor-Sagiv, who heads the sustainability field at the School of Architecture: "The projects which the students developed offer a new and healthy relationship between the city and its backyard, in this case the waste handling site, and between the residents and the waste they produce daily. At present we all turn our backs on our unnecessary and polluting materials, prefer to forget them and not to take responsibility for what we cause to the environment, nature and to those who live in the vicinity of these materials. The projects which the students presented compel us to squarely face the ramifications of our way of life and the consequences of the long-standing policy of neglecting nationwide waste handling and turning the Negev into the country's waste infrastructure site. The SCE School of Architecture strives to challenge current thought patterns about planning and construction, such that environmental and sustainability values will be integrated into the architectural endeavor and help make our residential spaces healthier and more resilient in the face of the climate crisis".

Nir Bar-David, Director of Dudaim Recycling and Environmental Education Park in the Negev: "As an Israeli center for waste handling and recycling and a knowledge center, we attribute great importance to environmental education of the community and to joining forces with academia in order to create an impact. The future of the community in the Negev is intertwined with the future of waste handling. Dudaim Park acts to integrate the correct approach to waste among professional communities, already at the early training stages, and this definitely also holds true for the planning and construction field. Future planners must view environmental protection as a central value when formulating plans. We welcome the reality-changing plan the students presented, and look forward to as many technological and social developments as possible that will enable the State of Israel to surmount the worsening waste crisis".

ChatGPT: Is this the Right Direction in the Development of Creative Thinking?

Dr. Adi Katz, head of the Industrial Engineering and Management Department, SCE Ashdod

"Technological progress has merely provided us with more efficient means for going backwards" - wrote the British author Aldous Huxley already in 1937, and it seems that this quote is truer than ever these days. OpenAI's chatbot, ChatGPT, is currently at the center of attention, virally generating the interest of many. ChatGPT is a natural dialog interface (chat) that can plan a three-day trip for you in Croatia, write code for a computer game and create a database in any field you want.

Sounds amazing! A technology that will save us cognitive effort and a great deal of time in every field. Nonetheless, we must consider whether this advanced technology is not leading us down a wrong path in the development of creative thinking.

Many experts have already expressed their criticism regarding its reliability and factual accuracy, and raised questions that lead to the conclusion that in its current state – chat AI will require the user to continue to use critical thinking abilities. I argue that this technological progress will exact a different price, and that it is not a question of "if", but rather the well-known and familiar question of "what".

Good technologies not only solve problems and meet real needs; they also create new problems, side effects of sorts, that we must all consider. Many of the best thinkers said this before me. Marshall McLuhan, the well-known Canadian philosopher who coined the term "the global village", said that every extension of mankind, especially technological extensions, have the effect of amputating or modifying some other extension. For example, cars bring us quickly from place to place, but create air pollution and cause us to be less physically active and to be less healthy.

Use of ChatGPT may impair higher order thinking processes in decision- making ability and solving unusual problems • It is important to be aware of the price and not lose creative thinking abilities along the way

The fear is that use of ChatGPT, which emphasizes the output, the objective, and eliminates the process and the way, will impair higher order thinking processes of decision making ability and solving unusual problems. As noted, the new technology solves every problem without our having to make an effort, and produces outputs that we can judge and assess regarding the extent to which they correspond to what we wanted to receive. We don't have to think, or to be creative and use our imagination. Instead of the important bottom up way of thinking, which generates and develops outputs "from scratch" after cognitive effort, the focus is almost entirely on top down thinking and analysis in order to assess the existing output. Instead of writing code, you conduct a code review. Studies show the importance of alternating between the two forms of thinking (top down/bottom up) when solving problems.

The focus of 21st century educational programs is on the new skills and abilities needed to contend with the challenges facing humanity. Education emphasizes development of skills for dealing with complex problems and providing creative solutions in a rapidly and dynamically changing world. This includes thinking "outside the box", being creative, working in development teams, and the ability to conduct effective and productive interpersonal communication, to apply ethical thinking, to think independently and more.

Institutions of higher learning, as well as education systems, understand the importance of these skills in the 21st century. When we meet students we place an emphasis on these abilities and present them with challenges - in project-oriented courses, by organizing hackathons that require out-of-the-box creative thinking effort, and in many additional activities in the various courses. All these may be lost if we become addicted to the use technological shortcuts.

ChatGPT is here to stay, and therefore all stakeholders must consider how to ensure its moderate, restrained and critical use, benefiting from it while not losing important abilities that characterize the human race. Together with the stakeholders, we should all consider the price AI exacts from us, and how we do not lose creative thinking along the way.

Hedging Pension Savings Investment - Reality or Dream?

Dr. Elroi Hadad, Industrial Engineering and Management Department

The frequent crises in the financial markets, reflected in sharp negative returns, demonstrate the potential for substantial losses to institutional entities and a real risk to pension savings. For example, Ministry of Finance figures show that in 2022, which was not considered a "crisis year", the general pension funds achieved a negative return of 8.91%. It should be noted that the assets managed by these funds are intended to ensure a decent pension to the pension fund members and to provide an economic safeguard after retirement.

In light of the high exposure to the capital market, several regulatory changes were implemented over the past decade to protect the savings of pension fund members. These included: regulating the activity of institutional investors in corporate bonds (Hodek Committee) and implementing a pension model that adjusts the investment risk to the pension fund member's age (Chilean model). Nonetheless, these changes did not eliminate market exposure, and certainly did not provide protection to pension savings. Case in point, in 2022 the returns of the general pension funds in the investment track for individuals 60 years of age and above, which as noted are intended to be a "solid" investment in order to avoid a crisis near retirement age, were very negative (see diagram).

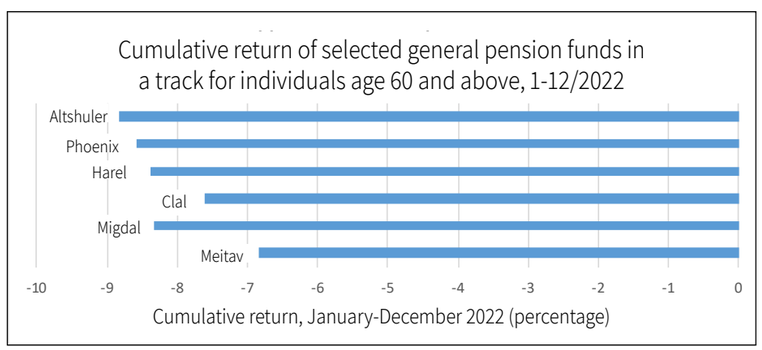
The possible potential damage to the expected pension motivated me to develop a new pension product aimed at protecting pension savings from possible value reduction. This product, that was developed in collaboration with Prof. Rami Yosef and Dr. Zvika Afik, combines trade in government bonds (risk-free) and call options on the base index that tracks the stock market (such as Tel Aviv 35), and enables an institutional entity to insure the pensions savings against value reduction, with the potential for profit from a rising index.

Trading in Options? Are you Crazy?

Contrary to the commonly held conception, trade in options is necessary for investors who want to hedge their investment, because they grant the investor the right to buy another asset at a price and at a time determined in advance. Therefore, in essence, options serve as insurance against base asset price fluctuations, and their price is equivalent to an insurance premium.

In this regard, the institutional entity can insure the pension savings by buying call options on the Tel Aviv 35 Index for example, at a set exercise price on a future expiry date. If on this date the Index price will be above the exercise price, the institutional entity will profit from the rising index ("buy cheap"); otherwise, the entity will only lose the premium paid.

Therefore, the financial product we developed offers to invest most of the pension savings in government bonds (which guarantee a return on the investment), and use the remaining savings to buy call options on the Tel Aviv 35 Index. In effect, protection of the pension savings, and particularly the potential profit, are found in the number of options that can be bought (which is affected by their market prices) and in the future value of the stock index.



Source: Pensyanet website, https://pensyanet.cma.gov.il/Parameters/Index, and data processed by the author

A financial product guaranteeing protection of 99% of the pension savings value

To demonstrate the feasibility, let's take the price of government bonds traded on November 22, 2022, and the price of call options on the Tel Aviv 35 Index with an expiry date at the end of December 2022. On this date the Tel Aviv 35 Index stood at 1,887.50 points and the price of the government bonds (ILS bond 0323) reflected an annual return of 2.79%.

Based on the above data, an institutional entity that wants to guarantee protection of 99% of the investment portfolio with an initial value of NIS 100 million, had to invest a sum of NIS 98,712,856 in the government bond (guaranteeing payment of NIS 99 million at the end of December). The remaining amount, estimated at about NIS 1,230,958 (after deducting commissions and other operating expenses) is intended for buying call options.

On this date the price of a single call option contract on the Tel Aviv 35 Index, that includes 100 call options at an exercise price of 1,880 each, was NIS 4,880. Accordingly, the institutional entity could have purchased about 252 call option contracts (1,230,958/4,880≈252).

And now we get to the interesting part:

Based on the above data, on the expiry date (end of December), the value of the Tel Aviv 35 Index was 1,786.19, reflecting a 5.37% fall in the Tel Aviv 35 Index (compared to an initial value of 1,887.5). On this date all 252 option contracts would not be exercised, while the value of the pension savings would remain NIS 99 million, reflecting only a 1% loss compared to a possible 5.37% loss (if the portfolio was directly invested in the Tel Aviv 35 Index). Therefore, the structured product allows for hedging the investment portfolio and demonstrates how risk can be mitigated for those with pension savings.

Alternatively, if the value of the Tel Aviv 35 Index would have increased to 1,980 points, reflecting a periodic return of about 4.9%, the cash flow on the expiry date would have been:

- Profit on every option: 1,980-1,880=100 (value of the current Index less the exercise price - 1,880).
- Profit on every option contract: 100x100=10,000 (profit for every option multiplied by 100 options in every contract).
- Total cash flow: 10,000x252=2,520,000 (profit for a single contract multiplied by 252 contracts bought).

Compared to an alternative investment in the Tel Aviv 35 Index, which would have generated a profit of about NIS 4,900,000 (100 million multiplied by the periodic return), the cash flow on the options expiry date reflects exposure to the Tel Aviv 35 Index at a rate of 2,520,000/4,900,000=51.42%, reflecting a high exposure rate to the stock market's positive return.

A structured product for hedging the pension investment portfolio

The high volatility in the capital market is a substantial burden for pension fund members, particularly for those nearing retirement, who in most cases want to safeguard their financial future after retirement.

Based on the financial product presented above, an institutional entity can develop a similar structured product that will be marketed to individuals saving for retirement and will provide a suitable solution for hedging the savings value. The structured product offers the ability to earn a profit, as well as considerable flexibility in defining the product, and as such is an excellent option to currently available market alternatives.

The above applicable example demonstrates that, under current market conditions, a real option is available to hedge a pension savings portfolio. Therefore, institutional entities should offer a similar structured product that could create a real revolution in the pension sector.

The LinkedIn Star Who Helps You ng People Realize the High-Tech Dream

After completing his studies in the Software Engineering department at SCE and finding employment at the international software company WIX, Vladis Markin decided to share his knowledge with young people and help them develop their own career in high-tech

The high-tech world is the dream of countless Israelis. Many children receive training for high-tech already in school, learning software programs and programming languages. However, for others – this world seems like a distant dream that cannot be realized. This is also the story of Vladis Markin who, from a young man with a partial matriculation certificate and 2-unit matriculation level mathematics, became the outstanding student of his Software Engineering cohort and a LinkedIn expert in the high-tech field. He achieved this owing to his motivation and determination, and the enveloping support he received during his studies. Markin (32), a graduate of the Software Engineering department, Be'er Sheva campus, can serve as an inspiration for many.

Markin recounts: "Up until six years ago, when I began to study software engineering, I had not been exposed to the academic world – neither among friends nor in the family. I do not have a full matriculation certificate or 12 years of study. I was lucky that the SCE enabled me to enroll in the Academic Preparatory Program, where I had to prove myself in order to continue on to degree studies". Markin completed the preparatory program with excellence, as he did in his bachelor's degree studies. His final project was named the outstanding project of his cohort.

Vladis recounts his choice of study track: "Up until I was 18 I studied at the Wingate Academy for sports excellence boarding school. I played professional volleyball in the National Youth Volleyball Team, and after the army played in the first league for two years. Despite my great love of sport, I understood that I could not advance anymore and make a living as a volleyball player. Looking for something new to connect to, I remembered that as a child I spent hours on the computer. It was a sort of escapism, in light of the fact that there weren't many things of interest for children in Sderot. I liked visiting websites, changing things on my computer. I understood that this was what I wanted to do going forward. I devoted time to working and saving money for my studies period, and in my free time conducted independent research and learned everything you could learn for free about software engineering. I wanted to come prepared, and to understand in which direction I would strive to advance in the employment market".

Things were not financially easy for Vladis. After making the decision to study software engineering, he worked in factories and cleaning houses, took out loans and got into debt. During his second year of degree studies his financial situation was very difficult, and he decided to stop his studies for a year and work in order to repay his debts. The SCE Student Dean's Office was not willing to give up on him and fought to have him continue his studies. Vladis recounts that the Dean's office staff helped him receive two scholarships, thanks to which he was able to complete his studies, and as noted – with excellence. "SCE gave me a huge enveloping framework, helped me when I needed it badly and pushed me to succeed. They not only enabled me to begin my studies, but also gave me enormous support along the way".

Viral Posts

The extensive assistance he received led Vladis to decide to devote his time to help others who have difficulty making their way into the high-tech industry. He studied the LinkedIn network and turned his professional profile into an inspiring profile for the many young people who set their eyes on such a glamorous career. "I do this to help, to create motivation and to offer my experience and knowledge to people who are confused, just like I was. This is a fulfilling feeling. I also believe that it is a wonderful way to network with workers who will advance to key positions in the future. I have already succeeded in helping several graduates find positions in high-tech".

On his LinkedIn page Vladis mainly writes posts about technology, but also about his personal story. "I wrote about how I was informed about a job interview while cleaning a toilet, and this caught on. I understood that people needed to be motivated and to understand that they are ok. I shared posts about my successes and failures, and that touches people".

Now, about a year and a half after completing his studies, Vladis Markin is an infrastructure software engineer at the Israeli software company WIX, which is valued at about 4 billion dollars. "I work in a group that develops tools for WIX engineers, so that their development work is quicker, easier and more efficient". He also continues to advise graduates and students and lectures about LinkedIn and about resume writing. "I think about ways to help and expose the students to the industry from the start, so that academia produces well-trained graduates who are familiar with the high-tech industry, can forge relationships and have a professional profile".

Shaping the Future

Doron Suissa, who was diagnosed in childhood with mild cerebral palsy, is now an outstanding student in the Software Engineering department, Be'er Sheva campus

- **Doron's willpower and high-level abilities were recognized by the Benin Scholars Program which helps STEM students**

Doron Suissa (26), a resident of Be'er Sheva, who was diagnosed in childhood with mild cerebral palsy, is currently an outstanding Software Engineering student at SCE. Doron was awarded a Benin Scholars Program scholarship that will enable him to devote most of his time to his studies.

Doron's mild cerebral palsy mainly affects his walking and vision, in addition to lack of sensation in his hands. He also suffers from high level ADHD symptoms. He lost his father at an early age, which made it even more difficult for him to concentrate on his studies.

Doron was also assessed as having a high IQ – 136, but was never placed in an appropriate class. He recounts that at the age of 16 he still did know how to read and write. "I was defined as a disenfranchised youth; almost four years passed until they let me into a small class, so I could get used to studying. Up until then I fell through the cracks".

Despite the many difficulties, Doron knew that he wanted to acquire a profession in the engineering field. "My big dream was to study something that would enable me to make an impact on my surroundings. I reached the conclusion that being an engineer is what suits me best, as someone who in practice shapes the future".

Doron completed the academic preparatory program with excellence, and began his first year of study like everyone else - however the intensive studies and cost of living, as someone who lives in Be'er Sheva on his own, almost broke him. "Having no choice, and just before I decided to stop my studies I approached the Dean of Students office and was referred to a Benin Scholars scholarship. This scholarship does not require any activity as a condition for receiving the scholarship, and therefore its recipients can devote most of their time and effort to their studies. Going forward they suggested I volunteer to help mentor students who had begun their studies. Of course I undertook this immediately, among other things as a sign of gratitude for the opportunity and great help I had received".

"I was defined as a disenfranchised youth; almost four years passed until they let me into a small class, so I could get used to studying. Up until then I fell through the cracks".

This is the Benin Scholarship Program's second year at SCE, granting study scholarships and living stipends to students with the potential to excel who come from a challenging socio-economic background and study STEM fields (science, technology, engineering and mathematics). The scholarships are granted by the Selim and Rachel Benin Scholarship Fund, the parents of the philanthropist Albert Benin, in cooperation with UJA-Federation of New York, based on the belief that investment in education in these fields will impact social and economic mobility.

Moshe Karoutchi, SCE Dean of Students: "We are proud that SCE was among the first two institutions to have a Benin Scholars pilot program, and also to take part in designing the program according to changing conditions in Israel and student needs. Thus we can realize the program vision and serve as a significant tool for the students, not only economically but also academically and personally, through significant content the students learn during the course of their studies".

Marching Towards the Future

Students in the Mechanical Engineering department visited the Robotican company in Omer, as part of the joint SCE and Lauder Employment Center program intended to create connections between students and graduates and promote quality employment in the Negev

Up until not long ago, advanced robotic systems that operate completely autonomously and can move on land and even in the air were considered science fiction. Today, these systems are manufactured here, in the Negev, at the Robotican company development center in Omer.

As part of the joint program of the SCE Dean of Students Center for Career Development and the Lauder Employment Center in the Negev, established by Ronald Lauder and JNF-USA, Mechanical Engineering students from the Be'er Sheva campus visited the company's advanced facility. The students are in their 4th year in the Robotics and Autonomous Systems track, just about to enter the labor market. The goal of the visit was to expose the students to quality employment opportunities in the Negev, cultivating opportunities so that they remain to live in southern Israel after completing their studies.

The Lauder Employment Center in the Negev acts to create connections between young higher education graduates and employers, and prepares students and graduates for the labor market through career counseling and accompaniment, workshops and special interview days with leading employers in the region.

During their visit the students watched a demonstration of robots currently under development in the company's various projects, and talked with one of the SCE graduates working at Robotican. The company's senior managers and the Lauder Center then summarized the visit and answered student questions regarding the transition from studies to the employment world.

Keren Cohen, Director of the Lauder Employment Center in the Negev: "The center set a goal to help students and graduates in the Negev at one of the most important junctures in their life. At a time of global economic slowdown, entering the labor market may be threatening - but with proper accompaniment it can be successful. The Lauder Center has a unique relationship with the leading employers in the Negev, as well as in-depth acquaintance with thousands of higher education graduates. We act in light of a clear vision according to which we will only be able to bring young higher education graduates to build their home in the Negev by advancing quality employment in the region".

Dr. Etan Fisher, head of the SCE Robotics and Autonomous Systems track: "We were very impressed with Robotican, its employees and outputs. We were particularly happy to meet the department graduates employed there, and to see application of the knowledge areas on which we place an emphasis in the Robotics track".

Zohar Kreitser, SCE Center for Career Development Coordinator: "We act to maintain direct contact with industry in order to expand our graduates' employment opportunities, and of course to contribute to the flourishing and growth of industry in the south. The visit at Robotican was fascinating and instructive. We thank the Lauder Center for its partnership, and wish Robotican continued success and prosperity".

The Course that Reveals the Design Secrets of the Hebrew Language

In an age replete with messages, images and content, it is very important to have eye-catching visual images that cause us to pause and focus • Visual Communication studies in general, and typography in particular, train graphic designers to communicate a clear and precise message, congruent with the content

Many mistakenly think that in written text, only the content communicates messages which we, the readers, are supposed to decipher. Particularly in this age, replete with messages, images and content, it is easy to lose the message the text creator sought to communicate. We are all familiar with the endless scroll and flick motions which emerged following the sheer amount of information passing through social media, and in fact everywhere.

All this creates the need to communicate messages in the form of visual images as well - that will be eye-catching and cause us to pause and focus on the messages. To achieve this there are professionals, graphic designers, as well as a broad suite of practices pertaining to language and letters: typography. Typography is an integral part of the fascinating world of visual communication.

"The essence of visual communication is communicating a message by visual means. Students learn methods and tools to communicate a clear and precise message, congruent with the content", emphasizes Roei Regev, academic coordinator of the new SCE Visual Communication department, the Ashdod campus, who also teaches the course "The Basics of Typography - Letter, Word, Sentence". The course deals in the visual form of letters, their design and order, which will cause the information consumer to stop and take an interest in the object in front of them.

"Visual communication is found all around us, including - websites, applications, newspapers, advertisements, signage, and digital products. For this reason it is currently one of the important fields driving the growth of organizations and companies", says Roei. "Typography is the visual representation of language, and as such it is directly related to local culture. Letters can be used to communicate complex and effective messages and to create a platform for communication and dialogue between people. Our typography studies include acquaintance with the history of the Hebrew writing system and analysis of visual means that enable the communication of messages - from selecting the right font to the spacing between the letters. Students learn how the letters were formed, understand the significance of different fonts, and strive to create a visual image that uses language as a tool".

Considering the importance of typography and the visual communication field in general, department graduates will have numerous employment possibilities. They can find their place in the advanced technology industries, the education system and the culture field, in leading companies, ad agencies and the digital industries.

A Week of Experiences and Challenges in the Civil Engineering Department

As part of the project oriented learning process, students in the department faced a series of challenges for a full week, enabling them to gain applied experience in a fascinating and experiential process

As part of a creative and very special week, students in the Civil Engineering department, Be'er Sheva campus, faced a series of unusual activities and challenges. The experiential challenges were posed to 1st to 4th year students - in the course "Building the Engineer" taught by the engineer Moab Maidi, and the course "Structure Statics" taught by Dr. Marina Firer. The challenges were based on engineering principles and presented as part of a project oriented learning process.

Among the challenges, the students had to build a spatial structure from lightweight materials, whose total weight would not exceed 400 grams. The structure had to stand on three bases, at a distance of 70 cm between them, and with a load at two points: at its center and at its edge. In another challenge the students had to build a bridge made of dry pasta, loaded with numerous different loads to test how much weight it could withstand (up until the maximum weight that would break the bridge). In both the challenges the students gained experience planning and building different models of structures (one of them when the material from which the structure is built is a given), and learned about the engineering behavior of the structures under different loads.

The creative week ended with the exhibition "Engineering Geology", as part of the course "Introduction to Engineering Geology" under the guidance of the head of the Civil Engineering department, Be'er Sheva campus, Dr. Dagan Bakun-Mazor. The exhibition included displays on topics the students studied on their own during the semester, for example types of rock and soil, volcanos, earthquakes and the creation of sinkholes. The panel of judges, comprised of persons from academia and senior geologists, examined the displays, and at the end of the exhibition day selected the most precise and attractive among them.

Dr. Dagan Bakun-Mazor summarized: "Over the years we see the advantages of the department's unique teaching method, which enables students to gain applied experience and learn from it. In addition to studying the course content, they learn how to work in a team and to contend with issues that prepare them for the professional world. Competitions increase motivation, and the experiential aspect enhances the learning process".

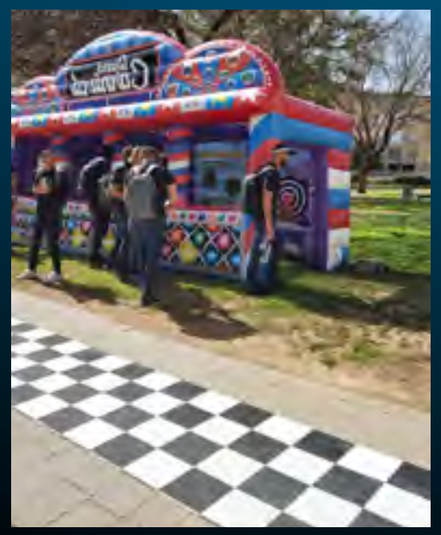
Celebrating Purim and the Beginning of the Semester

Purim parties and second semester opening events merged into a colorful carnival and fair

Students on both SCE campuses, Ashdod and Be'er Sheva, celebrated Purim with a colorful and joyful carnival that merged with the second semester opening event.

The event was organized by the Student Association on each campus, and included fair game stands with prizes, beverages and tasty dishes.

At the end of the event the Student Association conducted a draw among the fair stand participants. The prizes included iPads, wireless earphones and vouchers for pampering meals.



Academic Faculty

Roei Regev

Associate faculty
Visual Communication Department
Ashdod Campus

I am a graphic designer, artist and teacher. I grew up in Petah Tikva and now live in Haifa with my partner and our two children. I am a 2008 graduate of the Visual Communication department at Bezalel Academy of Arts & Design, and currently studying towards a Master of Fine Arts degree at the University of Haifa.

When we want to create a visual language for a certain topic we have to think about its context in the space. Who are its recipients? What does it seek to achieve? What is the social and cultural code it carries? As designers we must identify these contents, formulate, organize and arrange them: decide which are more important and how can they be mediated through visual communication. This process involves individual and moral choices.

The opening of the Visual Communication department on the Ashdod campus is uplifting, as it is a significant milestone in the perception of the local environment as a design center in Israel. I believe that visual communication studies aim to create the foundation for finding a unique and personal visual language, the kind that stems from in-depth acquaintance with the cultural, social and political landscape. The students will be the standard-bearers and pioneers of the visual communication field in the local space, and we will collaborate with various organizations, institutions and local initiatives.

Visual communication is entrenched in our surrounding space and aims to help solve realistic challenges by finding creative ideas and solutions that open the mind.

Administrative Staff

Zohar Zalik Kreitser

Center for Career Development
Coordinator
Dean of Students, Be'er Sheva campus

I am married to Mor and mother to Yair (13), Omer (11) and Hadar (9), a daughter to a family of farmers among the founders of Moshav Lachish. I was raised and educated in the moshav and live there to this day.

I hold a bachelor's degree in philosophy and Hebrew literature from Ben-Gurion University. I worked at the Intel plant in Kiryat Gat for 11 years in a range of positions, and then as a teacher for nine years.

I came to SCE in August 2008 to establish a new specialization program at the Center for Career Development in the Dean of Students office. I currently manage the Center's activity on the Be'er Sheva campus.

My employment experience, in both a large organization and as an educator, gave me significant tools for my current position, that connects the business-employment world and the education world. In my position I help students take both their initial and advanced steps - in the employment world.

The labor market is characterized by rapid fluctuations and changes, by innovation and changes to job roles and responsibilities owing to technological developments. At the Center for Career Development we place an emphasis, among other things, on continuously acquiring knowledge about the changing work world, on cultivating skills and in-depth understanding of the various study fields needed in the employment world. We tailor our service and responses to the students and offer them professional tools and a broad and diverse toolkit.

I am happy to come to work every day at the college, to meet my friends to the staff team and to be a part of the SCE family.

A Break to the Routine in the Engineering Project Management Track: **Smart Board Game Workshop**

Through an experiential activity the workshop promoted an understanding of basic concepts and of project management dilemmas and challenges

The students in the Engineering Project Management track, 3rd year students in the Industrial Engineering and Management department, Ashdod campus, underwent an unusual learning experience in March: a project management board game workshop conducted by PMZONE.

The workshop applies the principles of gamification - use of techniques from the game design world to improve aspects in non-game worlds. In board games, game elements can be included in the learning process, turning it into an enjoyable, enriching and unusual experience, while simulating the gamified learning topic.

In the workshop the students contended with common dilemmas in the project manager's world, and through them developed new perspectives to enhance their ability to deal with real-world professional dilemmas. Through this experiential activity the workshop cultivated in-depth understanding of basic project management concepts and of main dilemmas and challenges in this field.

The game was a "routine changer" in the course "Stochastic Project Management" taught by Dr. Hagai Ilani, head of the Engineering Project Management track.

“Good Deeds Day”: Ashdod Campus Students Refurbish a Center for At-Risk Youth

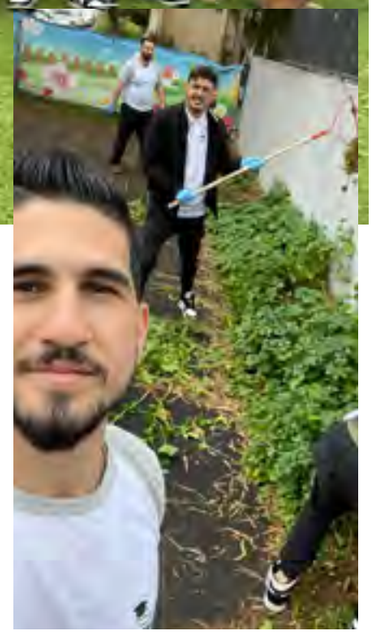
The dozens of students who volunteered for this activity demonstrated the power and ability of the Student Association members to contribute to the local community

In preparing for Good Deeds Day, that took place on March 14 this year, the Ashdod campus Student Association reached out to the Yedidim non-profit volunteer organization for at-risk children and youth and harnessed students, members of the Student Association, to volunteer to refurbish the non-profit’s building and surroundings.

The students cleaned the entrance area, weeded the grounds, installed synthetic grass, and painted the shelter which is used as the main building. To complete the day of intense activity the volunteers fixed the soccer field, cleaned the goal area and installed goal nets.

“Most Student Association members on the Ashdod campus are residents of the city, and we were sure they would be glad to volunteer to do something for the local community”, says Or Elmakias, chairperson of the Ashdod campus Student Association.

“Because of the scope of the activity, we had to recruit many students. We prepared registration forms, spread the word, and were happy with the great response. Dozens of students volunteered, demonstrating our power and ability to contribute to the local community. We will continue to cultivate the connection between the students and the community space in which we live, and of course - to take care of the wellbeing of SCE students”.



“The Campus Pod”

You are invited to visit the SCE podcast channel: “The Campus Pod” (https://anchor.fm/sce), presented by the journalist and radio broadcaster Lior Lerner.

On the podcast channel you can listen to SCE faculty members, graduates and students discuss a range of topics, among them economics, health, design, artificial intelligence and smart transportation.

You can also enter through the website by clicking on the icon: and listen through platforms such as Spotify, Google Podcasts and public radio.

We invite you to send ideas and topics for recording a podcast with your participation to the PR & Marketing Communications Department.

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