



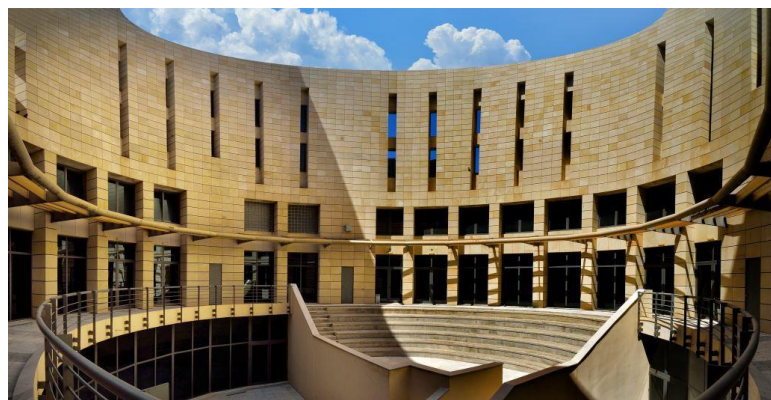
**TECHNICAL
UNIVERSITY
OF CRETE**

In the spotlight

Awards & Distinctions

September 2015–December 2016

<http://www.tuc.gr>





Demonstration of the SaveME project during the UAE Drones for Good Award Competition
Dubai Internet City, February 2016



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The contribution of the Technical University of Crete in research is broadly appreciated, as the Institution is recognized as one of the most prestigious research institutions in Greece with hundreds of research programs in progress. In March 2016, the External Evaluation Committee of the Hellenic Quality Assurance & Accreditation Agency overall evaluates the Technical University of Crete at the highest possible rank: **“Worthy of Merit”**. *“Research is a core mission of the Institution and as a result, TUC delivers scientific output of high calibre and volume. In terms of research publications, TUC is one of the most productive research institutions in Greece and compares very favorably with peer institutions in Europe and North America. The number of grant-funded projects has more than doubled since 2012”*. With these words, the External Evaluation Report of the Technical University of Crete by H.Q.A. confirms the high-level research produced by TUC.

In this direction, the pursuit of excellence is the driving force. Following are the University’s international distinctions during the years 2015-2016, starting from the most recent ones.

Prof. Minos Garofalakis has been elevated to IEEE Fellow, effective January 2017



The IEEE Board of Directors, at its November 2016 meeting, elevated Professor [Minos Garofalakis](#) to **IEEE Fellow**, effective January 1st 2017, with the following citation: *for contributions to data streaming analytics*. [IEEE Fellow](#) is a distinction reserved for select IEEE members whose extraordinary accomplishments in any of the IEEE fields of interest are deemed fitting of this prestigious grade elevation. Each year, following a rigorous evaluation procedure, the IEEE Fellow Committee recommends a select group of recipients for elevation to IEEE Fellow. Less than 0.1% of voting members are selected annually for this member grade elevation.

International Distinctions for SenseLab in cutting-edge space applications competition

Three prizes were awarded to two projects of the **Spatial Informatics Research Group** ([SenseLab](#)) of the Geodesy and Geomatics Engineering Laboratory in the context of the European Satellite Navigation Competition 2016:

1st Place Globally, European Satellite Navigation Competition, University Challenge, for the project **Message in a Bubble**, a novel viral communication platform.

1st Place Globally, European Global Navigation Satellite Systems Agency (GSA), The most innovative application idea for Galileo Initial Services for the project **Drones2GNSS**.

2nd Overall Winner, European Satellite Masters (among 413 expert teams) for the project **Drones2GNSS**.



The team members of the *“Drones2GNSS - the Future of Surveying: UAV-assisted GNSS Positioning in Obstructed Environments”* project are: Achilles Tripolitsiotis, Asst. Prof. Panagiotis Partsinevelos, Prof. Stelios Mertikas.

The team members of the *“Message in a Bubble: A novel spatio-temporal messaging platform”* project are: Asst. Prof. Panagiotis Partsinevelos, Nikos Afentakis, Achilles Tripolitsiotis, Sarantis Kyritsis, Stylianos Tsatsarounos, Emmanouil Stefanakis, Smaragda Pappa.

Prof. Minos Garofalakis has been recognized as a Most Influential Scholar to the field of Database according to AMiner List



Professor [Minos Garofalakis](#), has been recognized as a **Most Influential Scholar** for his outstanding and vibrant contributions to the field of Database, according to the AMiner List 2016. The [AMiner Most Influential Scholar Annual List](#) names the world's top-cited research scholars from the fields of science and engineering. The list is conferred in recognition of outstanding technical achievements with lasting contribution and impact to the research community. The 2016 winners are among the most-cited scholars from the top venues of their respective subject fields as of 2016. Recipients are automatically determined by a computer algorithm deployed in the AMiner system that tracks and ranks scholars based on citation counts collected by top-venue publications.

The world's best traffic management practices - a collaboration between VicRoads and TUC DSSL



The article "[World-First Technology Keeps Traffic Moving On The M80](#)", referring to the collaboration between VicRoads and the Decision Support Systems Laboratory of the Technical University of Crete was published on July 20th, 2016 on the webpage "Premier of Victoria (The Hon. Daniel Andrews MP)" of the Prime Minister of Victoria State in Australia.

The collaboration is focusing on a ground-breaking system for reducing vehicle congestion. The Adaptive Variable Speed Limit system recognizes when traffic is starting to build-up, and adjusts traffic speed, regulating traffic flow and providing a safer and more reliable journey for the drivers. Powered by the DSSL algorithm, the system assesses live traffic conditions and regulates traffic speed by sending information to drivers via overhead gantries. Without intervention, traffic would eventually become congested and stop. Instead this system aims to reduce the congestion time and maintain movement.

According to the article, quotes attributable to the Minister for Roads and Roads Safety Luke Donnellan:

"We are applying the world's best traffic management practices to roads right here in Melbourne."

"By being smarter about the way we manage traffic, we can get Victorians home sooner so they can spend more time with their family and friends."

TUC Professor broke the 10,000 citation level as reported in Google Scholar



Professor [Konstantinos Zopounidis](#) (School of Production Engineering & Management), broke the 10,000 citation level as reported in Google Scholar. Prof. Zopounidis is elected member of the Royal Academy of Economic and Finance Sciences of Spain and Distinguished Research Professor at Audencia Group, Nantes School of Management.

The Professor's research interests include: financial engineering, financial risk management, and multiple criteria decision making. He has published over 300 papers in premier international journals, edited volumes, and conference proceedings. He has also published several books and edited volumes on financial engineering and operations research. Prof. Zopounidis is Editor-in-Chief and member of the editorial board of several international journals. For his research work, Prof. Zopounidis has received awards and honorary distinctions from international research organizations, including among others the MOISIL International Foundation, the Decision Sciences Institute, the European Association of Management and Business Economics, the Royal Academy of Doctors of Spain, the Hellenic Operational Research Society, the International Association for Fuzzy Set Management and Economy, and the International MCDM Society.

TUC Eco Racing team - Winner of the Shell Eco Marathon Safety Award in the Urban Concept category



[TUCER team](#) (TUC Eco Racing) was the winner of the **Shell Eco Marathon Safety Award** for the 3rd time in the last 6 years in the Urban Concept category. The team participated for the 9th time in the Shell Eco Marathon (SEM), which took place in London, UK, 30th June to 3rd July 2016.

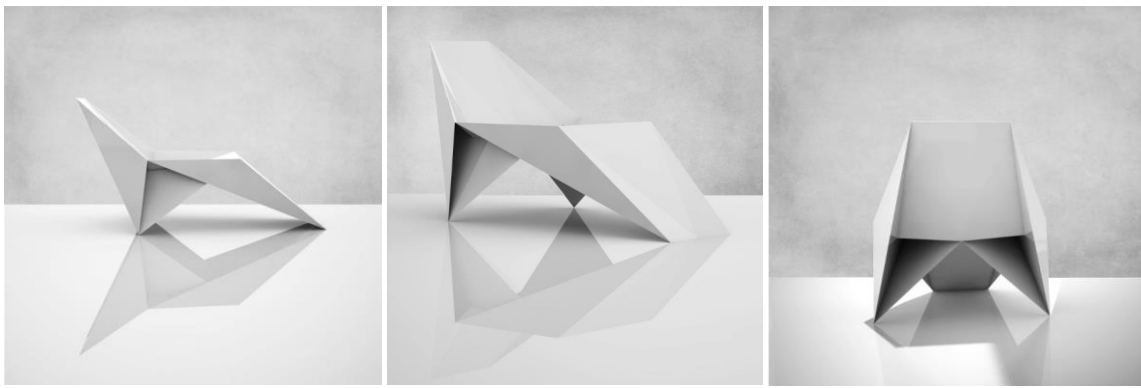
This year's entries, from various institutions around Europe, exceeded 200; however TUCER remains the only Greek participant in the Urban Concept category.

The team presented this year an advanced vehicle, named *Spyros Louis* - in order to honor the great Greek Olympic Marathon winner - aiming to excel in a brand new and extremely demanding route. Significant improvements were made in the vehicle's chassis, which has been re-designed in order to achieve better handling and safety in race conditions. Additionally, new energy management modules targeting fuel consumption were installed together with driver's safety devices (one of the main targets of this year), new aerodynamic components, the powertrain has been massively improved and advanced car and driver status telemetry systems, with live data transferring, have been integrated to the car.

Team's persistence in car-driver safety, together with team's organization regarding safety, impressed the judges who commented:

"TUC Eco-Racing won for its excellent blend of vehicle design and safety, as well as occupational safety. A lot of thought went into the structural integrity of the vehicle – their chassis had crumple zones that deform to protect the driver, while being very structurally rigid. They balanced safety, performance and design."

Origami Chaise Longue is the "Gold" Home Interior Product at the International Design Awards



Dimitris Sergentakis, student at the School of Architecture of TUC, is the IDA 15 - winner (gold) under the Home Interior Products category, who was also distinguished with honorable mention under the category Interior Furniture at the International Design Awards for the “**Origami Chaise Longue**” product. The chair was developed at the [Digital Fabrication Laboratory of the Technical University of Crete](#), during the course «Associative Design» (tutor: A. Vazakas) in the Academic year 2015-16.

The [International Design Awards \(IDA\)](#) exists to recognize, celebrate and promote legendary design visionaries and to uncover emerging talent in Architecture, Interior, Product, Graphic, and Fashion Design. IDA aspires to draw attention to the iconoclasm of design worldwide, conceptualizing and producing great work. IDA-15 honorary juries examined over 1000 entries submitted by architects and designers of interiors, fashion, products, and graphics from 52 countries throughout the world. After final decisions had been made, the jury rewarded the best professional and emerging designers for their achievements in terms of design, creativity, usability and innovation.

“ASTRAPI” - Winner of the «Seeding Ideas Harvesting the Future» TUC Innovation Contest



Six teams, with the most innovative ideas submitted to the «**Seeding Ideas Harvesting the Future**» TUC Innovation Contest, were invited to present their proposal during the startup pitching session of the [international event "Innovation & Entrepreneurship at TUC 2016"](#), which was organized by the Technical University of Crete, in July 1st, Chania, Crete. The winning idea of the contest was:

ASTRAPI: Scatter Radio-Based, Zero-Power, Battery less, Wireless Sensor Networks for Monitoring of Environmental Microclimate, Plant Interactions and Ambient Living

ASTRAPI offers ultra-low cost, digital wireless sensors of environmental humidity, soil moisture, temperature and luminosity, without battery and power consumption two orders of magnitude below state-of-the-art and based on backscatter radio and intelligent signal processing. ASTRAPI targets at better quality and water savings agriculture, with ultra-low cost per wireless sensor.

The members of the team are: Bletsas Aggelos, Alevizos Panagiotis, Daskalakis Spyridon-Nektarios, Tountas Konstantinos, Vougioukas George.

The Prize was awarded by Mrs. Irit Ben-Abba, Ambassador of Israel to Greece. All the members of the team won a trip to Israel in order to get acquainted with the success model of Israel innovation technology.

Best applied Urban Heat Island research award for EMBER



The article entitled: **"Coupling building energy simulation software with Computational Fluid Dynamics for the evaluation of the impact of urban outdoor conditions on the energy consumption and indoor environmental quality"** submitted by the [Energy Management in the Built Environment Research Lab](#) (EMBER) with authors Kostas Gobakis and Denia Kolokotsa received the **Best applied Urban Heat Island research award** at the *4th International Conference on Countermeasure to Urban Heat Islands and climate change through mitigation and adaptation* that was held in Singapore, 31st May-1st June 2016.

The aim of the specific work is to describe an indoor-outdoor environmental conditions 'coupling methodology. This methodology provides the capability of evaluating the impact of urban heat island and climate change on the indoor environmental quality and energy consumption of buildings. The overall approach is validated and tested using the data collected via the Internet based energy management system for University campuses, installed in the Technical University of Crete, School of Environmental Engineering Campus buildings, in the framework of the [project Camp-IT](#).

The Fourth International Conference on Countermeasure to Urban Heat Islands (4th IC2UHI), was devoted to the science, engineering and public policies to help relieve the excess heat and air pollution of Summers in hot cities. It has long been recognized that the excessive heat and smog in many cities in the summer, the "Urban Heat Island", is partly due to the choices of building materials, vegetation and urban design.

Intelligent Transportation Systems | TUC at the top-10 internationally according to H-Classics citation analysis



Citation classics offer an outlook on those papers that have attracted great and historical interest by a research community and that could be also considered the basis of the research field. A new approach, which is called H-Classics, has been developed to identify such highly cited papers. It is based on the H-index and is sensitive to both the own characteristics of the corresponding research discipline and its evolution. The study **“Analyzing Highly Cited Papers in Intelligent Transportation Systems”**, IEEE Trans. Intell. on Intelligent Transportation Systems, vol. 17, no. 4, pp. 993–1001, (April 2016) by José A. Moral-Muñoz, Manuel J. Cobo, Francisco Chiclana, Andrew Collop, and Enrique Herrera-Viedma, provides a useful insight into the development of the intelligent transport systems research field, revealing those scientific actors (authors, countries, and institutions) that have made the biggest research contribution to its development. According to the above study, Greece is the 2nd most productive country, and the **Technical University of Crete is at the top-10 internationally.**

External Evaluation Report of the Technical University of Crete



“Research is a core mission of the Institution and as a result, TUC delivers scientific output of high calibre and volume. In terms of research publications, TUC is one of the most productive research institutions in Greece and compares very favorably with peer institutions in Europe and North America. The number of grant-funded projects has more than doubled since 2012”.

With these words, the External Evaluation Report of the Technical University of Crete by the **Hellenic Quality Assurance & Accreditation Agency (H.Q.A.)**, confirms the high-level research produced by TUC.

Equally positive are the comments of the External Evaluation Committee (EEC), regarding the quality of education provided by the Technical University of Crete. According to the EEC report:

“TUC’s curricula are up-to-date according to high international standards. Periodic evaluation of curricula leads to potential adaptation of course content or introduction of new courses to follow the evolution of the discipline and meet international academic trends.” The EEC also refers to the *“excellent job placement for graduates of certain Schools due to quality training”*, as a main strength of the Programs of Undergraduate Studies.

The External Evaluation Committee overall evaluates the Technical University of Crete at the highest possible rank: “Worthy of Merit”.

The highest rank was also given to individual sections, such as, Organizational Development Strategy, Research Strategy, Environmental Strategy, Internationalization Strategy, Social Strategy, Central Administration Services of the Institution and the External Evaluation Procedure followed.

Finally, we quote the following, according to the EEC report:

“The Institution is populated by highly skilled and highly motivated faculty, staff, and graduate students who have the potential, will, and ability to excel. The very fact that TUC continues to function and deliver acceptable output is solely due to the strong interest and enthusiasm, high level of responsibility and volunteerism beyond normal expectations of the Institution leadership, faculty and staff. EEC highly commends this attitude of TUC. The TUC’s administrative team, faculty, and staff should be applauded for these efforts.”

Election of Professor Costas Synolakis as the 45th Member of the Academy of Athens



Costas Synolakis, Professor of Natural Hazards at the School of Environmental Engineering was elected on 17 March 2016 as the 45th member of the Academy of Athens, which is the only National Academy of Greece.

Prof. Synolakis is the leading tsunami engineer whose research over the past three decades spans a wide array of topics including: tsunamis, coastal engineering, water wave theory, breaking waves, run up, near-shore processes, seismology, marine geosciences, and volcanism. He has published numerous highly cited, key papers on these topics. His legacy includes the MOST code (the Method of Splitting Tsunami model), which has become the standard operational model used for inundation maps along the US Pacific coast. Prof. Synolakis has mentored a generation of students who have themselves become leaders in academia, industry and government. Throughout his career, he has led, driven, inspired, and provided direction to tsunami research and coastal hazards mitigation on a truly global scale. He has organized and led several tsunami survey teams in the last twenty years.

Professor Synolakis will be the 4th Academician in the 90-year history of the Academy of Athens to hold the Chair of Earth Sciences.

International Distinction for Save-ME at Dubai competition



Spatial Informatics Research Group ([SenseLab](#)) of the Geodesy and Geomatics Engineering Laboratory has been selected within the finalists of the prestigious [Drones for Good Award](#) and won the 3rd place at the international award category.

The second edition of the Drones for Good Award gains momentum as one of the most popular technology podiums in the world. During the three-day event, 40 semi-finalists in both the International and National competitions presented live demonstrations of their projects in front of an expert panel of international judges. The UAE Drones for Good Award and the UAE AI & Robotics Award for Good received more than 1,600 projects from 165 countries. There was remarkable participation from outstanding international universities such as Harvard, MIT, Oxford, London Business School, RMIT, University of Toronto and Seoul National University.

SaveME project of the SenseLab Research Group is a novel idea that addresses health & humanitarian aid, civil security, elder and handicap assistance through the rapid use of a user's smartphone transformed into a drone. Thus, even when there is no mobile phone service in the area of need the drone may fly to acquire connection, automatically inform Authorities of the situation and tracked position of its owner, or even fetch required medicine. Additionally, in case of a natural hazard the "smartdrone" may scan the area providing sensor maps (e.g. temperature, pollution) and define escape routes. Every hiker or group of travelers, every family, every person with health problems can easily carry a small drone case that will host their mobile phone and perform emergency actions at a press of a button. As one can imagine, the applications and functionalities are limitless including health, civil protection, inspection in technical constructions, industrial infrastructure, ocean, environment, agriculture, biodiversity sectors, or even just for fun. Technically, it involves swarm management, automated landing, crowd sourcing, three-dimensional mapping, thematic map generation, routing, etc. *"We provide an easy to acquire and operate personalized product that we envision to be sold in all mobile phone stores as an accessory. We rapidly proceed in a person-centered rather than merely Agency-based crisis management era".*

Assist. Prof. Panagiotis Partsinevelos, Achilles Tripolitsiotis, Sarantis Kyritsis, Nikolaos Prokas, Stathis Bikos were the members of the team travelled to Dubai to demonstrate SaveME project, supported by Andreas Pitsiladis, Angelos Antonopoulos and Theofilos Chanielakis.

Professor Mallouchou-Tufano selected as the Jury President for the Europa Nostra Awards 2016



Dr. Fani Mallouchou-Tufano, Professor at the School of Architecture of the Technical University of Crete, was appointed as the President of the Jury for the annual European Committee Prizes for Cultural Heritage/Europa Nostra Awards, for the year 2016. She was originally, selected to this post for a period of two years (2014-2015). The jury, which awards prizes for safeguarding Europe's architectural & archaeological heritage, landscape and the conservation of works of art, comprises members from 12 European countries (Greece, Turkey, Italy, Spain, France, Belgium, the Netherlands, United Kingdom, Germany, Sweden, Estonia, Romania) of various backgrounds and specialties (archaeologists, architects, landscape architects, art conservation experts and cultural heritage managers). Mrs. Mallouchou represented Greece in the aforementioned Jury from 2008 until 2013.

International Distinction for the School of Architecture in Start for Talents 2015 Competition



Second-place winners of the 2015 Start for Talents Competition were Moschou Theodora & Matsouki Sofia-Nefeli students at the School of Architecture of the Technical University of Crete. The topic was the design of a School of Arts in London. As far as it concerns their project, students said that *"...from the very beginning, great significance was given upon the interrelation that unfolds between the School and the district itself. What is suggested is the establishment of a landmark for the district, which will function as a territory dedicated to art, a space of art. This space of art called Artscape (art and landscape) becomes a part of this city and takes to it by creating accesses and movements, in which a tour of the space constitutes a vivid art experience. Thus, the aim is to design a space capable of functioning with dual roles, that of the school, a space of creativity and education and also the meeting place for artists from all over the world and a space of exhibiting and promoting the outcome, bringing the spectator closer to a more lively side of modern art, that of artistic creation."*

TUC Council Member Professor Spiros Agathos, named a Fellow of the International Water Association



TUC Council Member [Professor Spiros Agathos](#) has been named a Fellow of the [International Water Association \(IWA\)](#) for the year 2015. This distinction comes from IWA which is headquartered in the Hague and is the largest international association of researchers, professionals and organizations related to the water sector, with more than 10,000 individual members and corporate entities. The nomination follows a strict selection process based on the proposal and peer-review of persons who have made outstanding scientific or technological contributions in fields related to water. Professor Spiros Agathos received a certificate from the President of the IWA for his research in bioremediation and microbiology of wastewater treatment processes.

CybEarth - Winner at the International Competition “NCMA Spatio-temporal data visualization challenge”, organized by the EU Program Copernicus



The proposal under the title «**Adaptive augmented visualization of spatial, temporal and spectral Earth Observation data upon dynamic mobile device views**», submitted by the Assist. Prof. Panagiotis Partsinevelos and Team from TUC's SenseLab, was the winner at the International Competition “*NCMA Spatio-temporal data visualization challenge*”, which was organized by the EU Program *Copernicus*. The winning idea: A mobile app namely **CybEarth** that provides augmented first person views of reality. By positioning a mobile device over an area, layers of spatial data and Earth Observation (satellite) imagery are projected on screen, dynamically matching the field of view of the camera. The user may navigate in spectral and temporal scales and add geo-tags. Further, the mobile device can be adjusted in a prototype UAV platform to integrate real time image data. The app incorporates any type of spatial data including Sentinel SAR, multispectral, vector, and sensor data. CybEarth introduces a novel generic platform embracing most EO applications from a user point of view: sea, land, air environmental monitoring, natural disaster assessment land use change, agriculture phenology, etc. promoting Earth-system awareness e-Governance and citizen participation.

The Oslo Opera House—Condition analysis and proposal for protection and maintenance of exterior marble



The Lab of Materials for Cultural Heritage and Modern Building (MaCHMoB) of the School of Architecture, with Scientific Responsible the Associate Professor Noni Maravelaki and main Researcher Dr. Chrysi Kapridaki, along with the Betong Consult AS, NanoPhos SA, the Laboratory Materials and Methods for Cultural Heritage of the Politecnico di Milano and the Surfa Products Scandinavia AS, jointly carry out the project: *“The Oslo Opera House – Condition analysis and proposal for protection and maintenance of exterior marble”*, in Oslo, Norway. The Oslo Opera House is a listed building.

The project is being done in close cooperation with the Norwegian Directorate for Cultural Heritage (Statsbygg) regarding the approximately 23 000 m² Carrara Marble that decorates the external facades and roof of the Opera. In this project, Prof. N. Kallithrakas Kontos, the MSc candidates Sofia Tzanaki and Kali Kapetanaki and the student Antonis Theologitis also collaborate.

Significant Paper at FPL London 2015 list



The paper **Fast, Large-scale String Match for a 10Gbps FPGA-based Network Intrusion Detection System (2003)**, was awarded during the FPL London 2015 Conference and was included in the list of the most Significant Papers published, from 1991 to 2014, in the context of FPL. The selection was made by an international Significant Papers Committee (SPC). Only regular papers were considered and Google Scholar was used for citation counts. The total number of papers considered was 1765. Twenty seven (27) papers were selected, representing 1.5% of the total. The authors of the paper are: [Ioannis Sourdis](#), who is currently an Associate Professor at the Chalmers University of Technology and [Dionisios Pnevmatikatos](#), Professor at the ECE School of the Technical University of Crete. The paper was written during the postgraduate studies of I. Sourdis at TUC. Prof. Pnevmatikatos was the Master Thesis' Advisor.

First prize at the POTY2k15 contest organized by Dassault



The CADlab team of the School of Production Engineering and Management developed a unified production line for crystalline photovoltaic panel recycling as a part of the research program Redesign & Recycling of Photovoltaic Module Recycling, RE-PV. The industrial unit that was designed addresses the promising domain of “Making Solar Energy Economical”, one of the 14 Grand Challenges for Engineering identified by the US National Academy of Engineering. The scope of the project is the parametric design of an integrated crystalline silicon PV recycling process, applicable to the industrial level, with the use of CATIA design platform. The contest was organized by Dassault Systèmes. The CADlab team of Meletios Rentoumis and Ilias Athanailidis, under the supervision of professor Nikolaos Bilalis, conquered the first place among 432 team projects submitted from all over the world.





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