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**KEY=ALPHA - CIERRA ROMAN**

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**HYPERLOOP ALPHA**

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**ELON MUSK**

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**A BILLIONAIRE ENTREPRENEUR CHANGING THE WORLD FUTURE WITH SPACEX, TESLA MOTORS, SOLAR CITY, HYPERLOOP**

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*Createspace Independent Publishing Platform* **WHY YOU SHOULD READ THIS BOOK** Everybody wants to know Mark Zuckerberg. Young people adore very much of this intelligent fellow. Girls would die for an hour with him (Sorry, Priscilla). Everyone -- just everyone wants a piece of him. Well, after all, the world is swarmed by 1.5 billion Digital Natives and Immigrants who make use of Facebook, the company he founded inside his cramped dorm-size room. Then here comes Elon Reeve Musk climbing up the ladder of the most influential and successful people to date. His name is already permanently imprinted on Forbes Magazine. Not only does he juggle leading and running today's biggest companies (note: plural form), but this guy is literally going for the moon--err, Mars, actually. Mr. Musk does not aim to conquer the world with his brilliance, ingenuity, and enormous confidence in human capabilities, but he is aiming to conquer the universe. To say that this man dares to push the envelope of the human knowledge is an understatement. Fédération Aéronautique Internationale, the sole governing body for the ultimate aerospace records, has awarded Musk with FAI Gold Space Medal. This is the same awarded that Astronaut Neil Armstrong. To know the reason behind this award, you simply have to flip one chapter after the other. This book illustrates how Elon Musk is thriving to satisfy everyone's futuristic fancies. This is not to hail him as the best man who ever worked on the face of the earth, but to prove his authenticity as a genius and as a man of vision. Table of Contents **WHY YOU SHOULD READ THIS BOOK** 2 **THE MAKING OF ELON MUSK: 7** **THE EARLY DAYS - CHILDHOOD, FAMILY, AND EDUCATION** 7 **Elon the Introvert** 8 **Elon's Educational Background** 10 **THE HEARTACHES OF THE YOUNG ELON** 10 **Elon's Pain Became a Family Affair** 11 **Elon's Pain Inspired his Plot to Escape** 12 **ELON MUSK AND HIS MATTERS OF THE HEART** 13 **LIFE-CHANGING CAREER OF ELON MUSK: 16** **A QUICK LOOK AT COOL TWISTS AND TURNS OF ELON MUSK'S CAREER** 16 **SPACEX: THE BEGINNING, THE ACCOMPLISHMENTS, THE GOALS** 19 **SpaceX and its Milestones** 21 **Contract with NASA: The Flight of the Dragon** 21 **Meet Falcon 9 and Falcon Heavy** 22 **Falcon 9** 22 **Falcon Heavy** 23 **Elon Musk's Goal: Achieve REUSABILITY for humanity** 24 **SpaceX Funding Sources** 24 **TESLA MOTORS: 26** **TESLA NOW AT A GLANCE** 26 **MANUFACTURING PLANTS** 29 **TESLA THEN: A STORY OF COLLECTIBLE CARDS, FRIENDSHIP, AND COLLISION BEFORE COLLABORATION** 31 **Meeting Elon Musk for the First time** 33 **Timing was Everything!** 34 **Roadster's Launch: Checkbook, Cocktails, and Characters** 36 **Musk vs Eberhard: The Collision of the Two Giants** 37 **The Elon Musk Era Unfolds** 38 **SOLARCITY: 40** **SOLARCITY IN A NUTSHELL** 40 **What Makes SolarCity Different?** 42 **The SolarCity Project** 43 **SolarCity and the SMBs** 43 **ELON'S FORMULA FOR CLEAN ENERGY: SOLAR CITY PLUS TESLA BATTERY** 45 **SolarCity and its Aim to Go Global** 46 **HYPERLOOP: 48** **HYPERLOOP AND ITS 3 P's: PRINCIPLE, PURPOSE, AND PREPARATION** 48 **The Science Behind the Hyperloop** 51 **The Hyperloop's Alpha Paper** 51 **The Latest on the Hyperloop Project** 53 **Elon Musk: Break a Pod!** 54 **THE FUTURE OF ELON MUSK** 56 **ELON MUSK: CULTIVATING HIS FUTURE ALONGSIDE A FUTURE FOR THE HUMANITY** 56 **On Battling with Climate Change** 58 **On strengthening transport sustainability** 58 **On the continuous flourish of Artificial Intelligence** 58 **The Future of Mr. Musk is Our Future** 59 **PERSONAL LIFE** 61 **Philanthropy** 62 **Marriages** 63 **TECHNOLOGICAL CONTROVERSIES AND LAWSUITS** 65 **Controversy on Subsidies** 67 **Controversy on Self-Driving Cars** 68 **Marketing of Electric Vehicles** 70 **People's Rating of Musk** 72 **THE FACTORIES AND AWARDS** 75 **Musk the Boss** 78 **Awards and Recognition** 81 **Tesla Rolls Out Better EV Batteries, 'Ludicrous Mode'** 84 **Tesla Model S Digital Weaknesses to Be Exposed By Hackers** 87 **Tesla Motors' Home Battery Pack** 89 **Elon Musk just announced 'Ludicrous Mode' for the Tesla Model S** 89 **SUMMARY AND CONCLUSION: 92** **UNIQUE PATH TO SUCCESS** 92 **75 Inspirational Elon Musk's Quotes**

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## HACKING PLANET EARTH

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### TECHNOLOGIES THAT CAN COUNTERACT CLIMATE CHANGE AND CREATE A BETTER FUTURE

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*Penguin* An exploration of the cutting-edge technology that will enable us to confront the realities of climate change. For decades scientists and environmentalists have sounded the alarm about the effects of global warming. We are now past the tipping point. As floods, storms, and extreme temperatures become our daily reality, “Reduce, Reuse, Recycle” efforts aren’t enough anymore. In *Hacking Planet Earth*, New York Times bestselling author Thomas Kostigen takes readers to the front lines of geoengineering projects that scientists, entrepreneurs, engineers, and other visionaries around the world are developing to solve the problems associated with climate change. From giant parasols hovering above the Earth to shield us from an unforgiving sun, to lasers shooting up into clouds to coax out much-needed water, Kostigen introduces readers to this inspiring work and the people who are spearheading it. These futurist, far- thinking, world-changing ideas will save us, and *Hacking Planet Earth* offers readers their new vision for the future.

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### ADVANCES IN MECHANICAL AND ENERGY TECHNOLOGY

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#### SELECT PROCEEDINGS OF ICMET 2021

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*Springer Nature* This book presents the select proceedings the 2nd International Conference on Mechanical and Energy Technologies (ICMET 2021). The broad range of topics and issues covered are bulk deformation processes and sheet metal forming, composites, ceramics, and polymers processing, corrosion, heat treatment, microstructure and materials properties, energy materials, failure and fracture mechanics, friction, wear, tribology, and surface engineering, functionally graded materials, cellular materials, low friction and corrosion resistive materials for energy applications, lubricants and lubrication, machinability and formability of materials, material science and engineering, and materials for energy storage. This book will be useful for students, researchers, and professionals working in the areas of mechanical and industrial engineering, energy technologies, and allied fields.

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### SMART AND INTELLIGENT SYSTEMS

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#### PROCEEDINGS OF SIS 2021

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*Springer Nature* This book is a collection of high-quality research papers presented at the International Conference on Smart and Intelligent Systems (SIS 2021), which will be held in Velagapudi Ramakrishna Siddhartha Engineering College (VRSEC), Andhra Pradesh, India, during February 25-26, 2021, in virtual mode. It highlights how recent informatics intelligent systems have successfully been used to develop innovative smart techniques and infrastructure in the field of modern engineering and technology. The book will also be of interest to those working in the field of computational intelligence, smart computer network and security analysis, control and automation system, cloud computing, fog computing and IoT, smart grid communication, smart cities, solar cell synthesis and their performance, green technology, and many more. The contents of this book prove useful to researchers and professionals.

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### FUTURE AUTOMATION: CHANGES TO LIVES AND TO BUSINESSES

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*World Scientific*

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### CREATIVITY, PROBLEM SOLVING, AND AESTHETICS IN ENGINEERING

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#### TODAY'S ENGINEERS TURNING DREAMS INTO REALITY

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*Springer Nature* This book illuminates what engineering is and how it relates to other disciplines such as art, architecture, law, economics, science, technology, and even religion. The author explains, from an intrinsic as well as descriptive perspective, why engineering is essential for our collective well-being, and how, like medicine, it is undertaken by people, and for people, to improve the human condition. He brings out the 'magic' of engineering practice as well as addressing the darker aspects such as warfare and the misuse of the internet. A too commonly held view assumes that the practice of engineers is a cold, purely quantitative and wholly technical enterprise of applying know science, and devoid of

creativity or aestheticism. In 2013 the United States National Academy of Engineering launched a campaign called “Changing the Conversation, Messages for Improving Public Understanding of Engineering” with four messages to impart about engineers: that they make a world of difference; are creative problem solvers; that they help shape the future, and are essential to health, happiness, and safety. In this volume, Professor Blockley incorporate these messages into an engaging exposition of engineering accomplishment in all of its evolving diversity, from the technician to the academic research engineer, illustrating the continuum of thinking and purpose from the fixer of the gas boiler to the designers of the A380 and the iPhone.

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### **GREEN AND SMART TECHNOLOGIES FOR SMART CITIES**

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*CRC Press* The book starts with an overview of the role of cities in climate change and environmental pollution worldwide, followed by the concept description of smart cities and their expected features, focusing on green technology innovation. This book explores the energy management strategies required to minimize the need for huge investments in high-capacity transmission lines from distant power plants. A new range of renewable energy technologies modified for installation in cities like small wind turbines, micro-CHP and heat pumps are described. The overall objective of this book is to explore all the green and smart technologies for designing green smart cities.

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### **ITF TRANSPORT OUTLOOK 2019**

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*OECD Publishing* The ITF Transport Outlook provides an overview of recent trends and near-term prospects for the transport sector at a global level as well as long-term prospects for transport demand to 2050. The analysis covers freight (maritime, air, surface) and passenger transport (car, rail, air) as well ...

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### **PROCEEDINGS OF THE 20TH CONGRESS OF THE INTERNATIONAL ERGONOMICS ASSOCIATION (IEA 2018)**

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#### **VOLUME VI: TRANSPORT ERGONOMICS AND HUMAN FACTORS (TEHF), AEROSPACE HUMAN FACTORS AND ERGONOMICS**

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*Springer* This book presents the proceedings of the 20th Congress of the International Ergonomics Association (IEA 2018), held on August 26-30, 2018, in Florence, Italy. By highlighting the latest theories and models, as well as cutting-edge technologies and applications, and by combining findings from a range of disciplines including engineering, design, robotics, healthcare, management, computer science, human biology and behavioral science, it provides researchers and practitioners alike with a comprehensive, timely guide on human factors and ergonomics. It also offers an excellent source of innovative ideas to stimulate future discussions and developments aimed at applying knowledge and techniques to optimize system performance, while at the same time promoting the health, safety and wellbeing of individuals. The proceedings include papers from researchers and practitioners, scientists and physicians, institutional leaders, managers and policy makers that contribute to constructing the Human Factors and Ergonomics approach across a variety of methodologies, domains and productive sectors. This volume includes papers addressing the following topics: Transport Ergonomics and Human Factors (TEHF), and Aerospace Human Factors and Ergonomics.

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### **MODEL VALIDATION AND UNCERTAINTY QUANTIFICATION, VOLUME 3**

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#### **PROCEEDINGS OF THE 37TH IMAC, A CONFERENCE AND EXPOSITION ON STRUCTURAL DYNAMICS 2019**

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*Springer* Model Validation and Uncertainty Quantification, Volume 3: Proceedings of the 37th IMAC, A Conference and Exposition on Structural Dynamics, 2019, the third volume of eight from the Conference brings together contributions to this important area of research and engineering. The collection presents early findings and case studies on fundamental and applied aspects of Model Validation and Uncertainty Quantification, including papers on: Inverse Problems and Uncertainty Quantification Controlling Uncertainty Validation of Models for Operating Environments Model Validation & Uncertainty Quantification: Decision Making Uncertainty Quantification in Structural Dynamics Uncertainty in Early Stage Design Computational and Uncertainty Quantification Tools

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### **ELECTRIC MOBILITY IN PUBLIC TRANSPORT—DRIVING TOWARDS CLEANER AIR**

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*Springer Nature* This book addresses various aspects of electric mobility deployment in public transport. These include transport policy-related issues as well as technical, organizational and technical dimensions of the fleet conversion process (from conventional one towards the increased share of electric vehicles in public transport). In the book, one

may find, e.g. the determinants for the successful functioning of electrified transport systems (including charging facilities), models and methods for battery electric bus energy consumption, the analysis regarding the charging strategies (including power-grid) as well as electric vehicle battery issues. As the process of fleet conversion is multi-faceted, the book also contains the issues related to cybersecurity in public transport, autonomous vehicles and hyperloop. The book is dedicated to transport professionals, consulting companies and researchers in the field of electromobility and modern transport systems.

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## **ICT FOR COMPETITIVE STRATEGIES**

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### **PROCEEDINGS OF 4TH INTERNATIONAL CONFERENCE ON INFORMATION AND COMMUNICATION TECHNOLOGY FOR COMPETITIVE STRATEGIES (ICTCS 2019), DECEMBER 13TH-14TH, 2019, UDAIPUR, INDIA**

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*CRC Press* Fourth International Conference on Information and Communication Technology for Competitive Strategies targets state-of-the-art as well as emerging topics pertaining to information and communication technologies (ICTs) and effective strategies for its implementation for engineering and intelligent applications.

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## **SMART CITIES**

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### **THIRD IBERO-AMERICAN CONGRESS, ICSC-CITIES 2020, SAN JOSÉ, COSTA RICA, NOVEMBER 9-11, 2020, REVISED SELECTED PAPERS**

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*Springer Nature* This book constitutes the thoroughly refereed proceedings of the Third Ibero-American Congress, ICSC-CITIES 2020, held in Costa Rica, in November 2020. Due to the COVID-19 pandemic the conference was held online. The 21 full papers presented were carefully reviewed and selected from 99 submissions. The papers are organized on topical sections on Energy Efficiency and Sustainability; Mobility and IoT; Infrastructure, Environment, Governance.

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## **HANDBOOK OF RAILWAY VEHICLE DYNAMICS, SECOND EDITION**

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*CRC Press* Handbook of Railway Vehicle Dynamics, Second Edition, provides expanded, fully updated coverage of railway vehicle dynamics. With chapters by international experts, this work surveys the main areas of rolling stock and locomotive dynamics. Through mathematical analysis and numerous practical examples, it builds a deep understanding of the wheel-rail interface, suspension and suspension component design, simulation and testing of electrical and mechanical systems, and interaction with the surrounding infrastructure, and noise and vibration. Topics added in the Second Edition include magnetic levitation, rail vehicle aerodynamics, and advances in traction and braking for full trains and individual vehicles.

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## **LANDSIDE ACCESSIBILITY OF AIRPORTS**

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### **ANALYSIS, MODELLING, PLANNING, AND DESIGN**

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*Springer* This book covers the analysis, modelling, planning, and design of airport landside access modes and their systems. It elaborates on the issues and related problems of airport landside accessibility in an innovative, comprehensive and systematic way. In addition to the general concept of accessibility, the book addresses the analysis and modelling of infrastructure-related, technological, operational, economic, social and environmental performance of road- and rail-based transport systems, as well as the core principles of their planning and design. The book provides guidelines on the modelling, planning, and design of airport landside access modes and their systems, which will contribute to the overall sustainable development of airports. Its main features are: presents a multidimensional examination of performance for specific airport landside access modes and their systems; pursues a qualitative and quantitative approach to developing performance indicators for estimating the sustainability of airport landside access modes and their systems; includes illustrative cases of airport landside accessibility, and numerical examples as exercises for assessing performance using the systems' indicators. As such, the book offers a valuable source of information for all practitioners involved in analysing, planning and designing more environmentally friendly airport access modes and systems, and who want to learn how to overcome the issues and problems surrounding landside accessibility. It will also benefit students studying the analysis and modelling of transportation systems, and researchers seeking to promote improved sustainability at airports.

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## GREEN CHEMISTRY

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### AN INCLUSIVE APPROACH

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*Elsevier* **Green Chemistry: An Inclusive Approach** provides a broad overview of green chemistry for researchers from either an environmental science or chemistry background, starting at a more elementary level, incorporating more advanced concepts, and including more chemistry as the book progresses. Every chapter includes recent, state-of-the-art references, in particular, review articles, to introduce researchers to this field of interest and provide them with information that can be easily built upon. By bringing together experts in multiple subdisciplines of green chemistry, the editors have curated a single central resource for an introduction to the discipline as a whole. Topics include a broad array of research fields, including the chemistry of Earth's atmosphere, water and soil, the synthesis of fine chemicals, and sections on pharmaceuticals, plastics, energy related issues (energy storage, fuel cells, solar, and wind energy conversion etc., greenhouse gases and their handling, chemical toxicology issues of everyday products (from perfumes to detergents or clothing), and environmental policy issues. Introduces the topic of green chemistry with an overview of key concepts Expands upon presented concepts with the latest research and applications, providing both the breadth and depth researchers need Includes a broad range of application based problems to make the content accessible for professional researchers and undergraduate and graduate students Authored by experts in a broad range of fields, providing insider information on the aspects or challenges of a given field that are most important and urgent

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### THE STACK

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### ON SOFTWARE AND SOVEREIGNTY

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*MIT Press* **A comprehensive political and design theory of planetary-scale computation proposing that The Stack—an accidental megastructure—is both a technological apparatus and a model for a new geopolitical architecture.** What has planetary-scale computation done to our geopolitical realities? It takes different forms at different scales—from energy and mineral sourcing and subterranean cloud infrastructure to urban software and massive universal addressing systems; from interfaces drawn by the augmentation of the hand and eye to users identified by self—quantification and the arrival of legions of sensors, algorithms, and robots. Together, how do these distort and deform modern political geographies and produce new territories in their own image? In *The Stack*, Benjamin Bratton proposes that these different genres of computation—smart grids, cloud platforms, mobile apps, smart cities, the Internet of Things, automation—can be seen not as so many species evolving on their own, but as forming a coherent whole: an accidental megastructure called *The Stack* that is both a computational apparatus and a new governing architecture. We are inside *The Stack* and it is inside of us. In an account that is both theoretical and technical, drawing on political philosophy, architectural theory, and software studies, Bratton explores six layers of *The Stack*: Earth, Cloud, City, Address, Interface, User. Each is mapped on its own terms and understood as a component within the larger whole built from hard and soft systems intermingling—not only computational forms but also social, human, and physical forces. This model, informed by the logic of the multilayered structure of protocol “stacks,” in which network technologies operate within a modular and vertical order, offers a comprehensive image of our emerging infrastructure and a platform for its ongoing reinvention. *The Stack* is an interdisciplinary design brief for a new geopolitics that works with and for planetary-scale computation. Interweaving the continental, urban, and perceptual scales, it shows how we can better build, dwell within, communicate with, and govern our worlds. [thestack.org](http://thestack.org)

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### CIRCULAR FASHION

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### MAKING THE FASHION INDUSTRY SUSTAINABLE

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*Laurence King Publishing* **Creating sustainable fashion has never been more important. Circular Fashion provides an accessible, practical, and holistic approach to this key topic for anyone studying fashion.** This introductory text to sustainability in fashion includes best practice case studies and profiles of key companies such as Patagonia, Veja, Christopher Raeburn, and Stella McCartney. It begins with an overview of the fashion business, tackling the issues of the linear production model of make, use, dispose, before introducing the idea of the circular supply chain. *Circular Fashion* is the must-have book for fashion students, creatives and anyone passionate about sustainability and fashion.

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## DYNAMICS IN LOGISTICS

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### PROCEEDINGS OF THE 6TH INTERNATIONAL CONFERENCE LDIC 2018, BREMEN, GERMANY

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*Springer* These proceedings contain research presented at the 6th International Conference on Dynamics in Logistics, held in February 2018. The integration of dynamics within the modeling, planning and control of logistic processes and networks has shown to contribute massively to the improvement of the latter. Moreover, diversification of markets and demand has increased both the complexity and the dynamic changes of problems within the area of logistics. To cope with these challenges, it must become possible to identify, describe and analyze such process changes. Moreover, logistic processes and networks must be revised to be rapidly and flexibly adaptable to continuously changing conditions. This book presents new ideas to solve such problems, offering technological, algorithmic and conceptual improvements. It primarily addresses researchers and practitioners in the field of industrial engineering and logistics.

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## BUSINESS TRENDS IN PRACTICE

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### THE 25+ TRENDS THAT ARE REDEFINING ORGANIZATIONS

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*John Wiley & Sons* Stay one step ahead of the competition with this expert review of the most impactful and disruptive business trends coming down the pike. Far from slowing down, change and transformation in business seems to come only at a more and more furious rate. The last ten years alone have seen the introduction of groundbreaking new trends that pose new opportunities and challenges for leaders in all industries. In *Business Trends in Practice: The 25+ Trends That Are Redefining Organizations*, best-selling business author and strategist Bernard Marr breaks down the social and technological forces underlying these rapidly advancing changes and the impact of those changes on key industries. Critical consumer trends just emerging today—or poised to emerge tomorrow—are discussed, as are strategies for rethinking your organisation's product and service delivery. The book also explores: Crucial business operations trends that are changing the way companies conduct themselves in the 21st century. The practical insights and takeaways you can glean from technological and social innovation when you cut through the hype. Disruptive new technologies, including AI, robotic and business process automation, remote work, as well as social and environmental sustainability trends. *Business Trends in Practice: The 25+ Trends That Are Redefining Organizations* is a must-read resource for executives, business leaders and managers, and business development and innovation leads trying to get - and stay - on top of changes and disruptions that are right around the corner.

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## MACHINE LEARNING FOR CYBER SECURITY

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### THIRD INTERNATIONAL CONFERENCE, ML4CS 2020, GUANGZHOU, CHINA, OCTOBER 8-10, 2020, PROCEEDINGS, PART II

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*Springer Nature* This three volume book set constitutes the proceedings of the Third International Conference on Machine Learning for Cyber Security, ML4CS 2020, held in Xi'an, China in October 2020. The 118 full papers and 40 short papers presented were carefully reviewed and selected from 360 submissions. The papers offer a wide range of the following subjects: Machine learning, security, privacy-preserving, cyber security, Adversarial machine Learning, Malware detection and analysis, Data mining, and Artificial Intelligence.

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## SUPERTALL: HOW THE WORLD'S TALLEST BUILDINGS ARE RESHAPING OUR CITIES AND OUR LIVES

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*W. W. Norton & Company* The global boom in skyscrapers—why it's happening now, how they're made, and what they do to cities and people. We are living in a new urban age, and its most tangible expression is the "supertall": megastructures that are dramatically bigger, higher, and more ambitious than any in history. Cities around the world are racing to build the first mile-high building, stretching the limits of engineering and design as never before. In this fascinating work of urban history and design, TED resident Stefan Al—himself an experienced architect—explores the factors that have led to this worldwide boom. He reveals the marvelous and underappreciated feats of engineering that make today's supertalls a reality, from double-decker elevators that silently move up to 50 miles per hour to the sophisticated blend of polymers and steel fibers that enables concrete to withstand 8,000 tons of pressure per square meter. Taking readers behind the scenes of the building and design of remarkable megastructures, both from the past (the Empire State Building, St. Paul's Cathedral, the Eiffel Tower) and the present (Dubai's Burj Khalifa, London's Shard, Shanghai Tower), Al demonstrates the impact of these innovations. Yet while the supertall is undoubtedly a testament to great technological victories, it can come at an environmental and social cost. Focusing on four global cities—London, New York, Hong Kong, and Singapore—Al examines the risks of wealth inequality, carbon emissions, and contagion that stem from supertalls. And he uncovers the latest innovations in sustainable building,

from skyscrapers made of wood to tree-covered buildings, that promise to yield a better urban future. Featuring more than thirty architectural drawings, *Supertall* is both a fascinating exploration of our greatest accomplishments and a powerful argument for a more equitable way forward.

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## **SUSTAINABLE ENERGY AND TRANSPORTATION**

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### **TECHNOLOGIES AND POLICY**

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*Springer* This book presents an integrated approach to sustainably fulfilling energy requirements, considering various energy-usage sectors and applicable technologies in those sectors. It discusses smart cities, focusing on the design of urban transport systems and sources of energy for mobility. It also shares thoughts on individual consumption for ensuring the sustainability of energy resources and technologies for emission reductions for both mobility and stationary applications. For the latter, it examines case studies related to energy consumption in the manufacturing sector as well as domestic energy requirements. In addition it explores various distribution and policy aspects related to the power sector and sources of energy such as coal and biomass. This book will serve as a valuable resource for researchers, practitioners, and policymakers alike.

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## **THE REALITIES OF 'REALITY' - PART III: IMPACTS OF SPEED AND TIME OPTIMIZATION ON REALITY**

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*Fritz Dufour* The main theme of this book is the impacts of speed and time optimization on reality, or more precisely on our modern society. But first, it sets the background by exploring the physics behind the concepts of speed and time, how they came about, how we became aware of them, and how did the new world of speed emerge, and why does it seem to be inescapable? It explores the speed of light and the speed of sound by linking them to our environment. It introduces the notion of Arrow of time or entropy, which grows from the past to the present, is expected to keep growing in the future, and hypothesizes that this is perhaps why our craving for speed and time optimization is here to stay with no end in sight. An important point discussed is that because of memories and experiences, people may choose to live either in the past, present, or future, which leads to the notions of presentism and eternalism. The book argues that while for presentists only the present is real, for eternalists both the past, present, and future are equally real. The book makes the case about speed and time optimization as a legacy of modernity by laying out the differences between modernism, modernization, and modernity itself. It shows how modernity is all about the now or the present, rather than the past and, how, as such, it's all about the new. So then, the changes that are now happening in our modern world can be traced back to a segment of history that dates back to the beginning of modernity, that is, which began with the Protestant Reformation and, is now rapidly approaching closure in the world of today's extreme finance. It argues about the technological implications of speed and time in the 21st century. It shows how technology has become an integral part of human existence and that it is inconceivable one can even think of escaping it. This Part III of the series shows the link between high-speed trading and faster connectivity and faster computers. It shows how, thanks to the Internet, information became freely accessible and is spreading faster and faster. It shows how supercomputers not only allow people to address the biggest and most complex problems, they also allow people to solve problems faster, even those that could fit on servers or clusters of PCs. This rapid time to solution is critical in some aspects of emergency preparedness and national defense, where the solutions produced are only valuable if they can be acted on in a timely manner. Finally, the social and psychological implications of speed and time in the 21st century are also addressed by considering the upside and the downside of moving fast, meaning leading a fast-paced life. The argument presented in the book is based on the analysis and the importance of stress in our daily lives and also explains the notion of chronobiology. Our biological clocks drive our circadian rhythms. An interesting point is that blind people may not perceive time the same way as the non-blind. Furthermore, the book shows how we perceive time differently as we age compared to when we were young. It also makes the case for the perception of time in dreams and in real life. Speed and time optimization may be deceiving, according to this Part III of the series. This can be proven by questions such as, (1) Is going over the speed limit really worth it? and (2) Is the saying "Slow down to go faster" a paradox?

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## **THE FUTURE OF TRANSPORT BETWEEN DIGITALIZATION AND DECARBONIZATION**

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### **TRENDS, STRATEGIES AND EFFECTS ON ENERGY CONSUMPTION**

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*Springer Nature* Energy systems are rapidly transitioning towards decarbonization, thanks in part to innovative digital technologies and changing mobility demands. This open access book examines the decarbonization and digitalization transformation in the transport sector, with a particular focus on energy consumption. By studying historical trends and outlining future scenarios, the authors illustrate the evolution of energy consumption in the transport sector, compare alternative decarbonization strategies, and analyze digitalization trends and their effects on energy consumption. The book addresses a broad readership of both academics and professionals working in the energy and transport

industries, as well as readers interested in the ongoing debate over energy, mobility and climate change.

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## **ADVANCES IN OPERATIONS RESEARCH EDUCATION**

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### **EUROPEAN STUDIES**

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*Springer* This edited monograph contains a comprehensive overview of educational developments in the fields of operations research (OR) and management science (MS). The book outlines key factors in OR/MS curricular programs and analyses different approaches regarding student enrollment and failure rates. The approach is genuinely international, whereas the focus lies on the European level. The target audience primarily comprises public policy planners in education, deans and school directors as well as program coordinators.

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### **THE 7 TRANSDISCIPLINARY COGNITIVE SKILLS FOR CREATIVE EDUCATION**

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*Springer* This book focuses on rethinking creativity for 21st century education. The specific emphasis examines the way that creativity spans disciplines, through a set of common thinking skills that the most accomplished thinkers in any field use. These seven transdisciplinary thinking skills are rooted in historical exemplars of creativity across disciplines. We examine these skills in more detail, chapter by chapter, to offer examples of what each skill looks like in disciplines ranging from art to science, or music to math, and beyond. This set of thinking skills reflects the way that creativity may look different across fields, yet there are common paths of creative thinking that cut across disciplinary boundaries. Beyond this each chapter also considers applications for such skills in 21st century educational contexts, with an eye toward creative teaching and technology. In all of this, the book weaves together broad cultural examples of creativity and the seven transdisciplinary skills, alongside specific application-based examples from technology and teacher education.

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### **REIMAGINING INNOVATION; THE FUTURE OF EXPONENTIAL LEADERSHIP**

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*AuthorHouse* Bill Gates, Windows, and Microsoft changed the world . . . but they were just the beginning. With the rise of digital technology, business moves at unprecedented speeds and now moves at an exponential pace. This pace is wreaking havoc to the business landscape as we know it. Disruption has brought “too big to fail” companies to their knees in a matter of months and it has made some industries obsolete. Any company or leader that doesn’t move at an exponential pace will be crushed by the new, massively transformative exponential organizations. These organizations are quickly expanding their purpose and invading new industries every day. Guides like Bill Gates, Jeff Bezos, Elon Musk, and more continue to provide us a roadmap for how to navigate the exponential horizon. Through a collection of nine keys of exponential leadership, we have created a formula to navigate the disruption. Exponential leadership—combined with emerging technologies, change, and disruption—will not only disrupt the world but will save it. It is time for a new generation of leadership. A leader that is purposeful, conscious, digital, and above all, exponential. Join us for a journey to reimagine innovation.

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### **PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON AEROSPACE SYSTEM SCIENCE AND ENGINEERING 2019**

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*Springer Nature* This book presents the proceedings of the International Conference on Aerospace System Science and Engineering (ICASSE 2019), held in Toronto, Canada, on July 30-August 1, 2019, and jointly organized by the University of Toronto Institute for Aerospace Studies (UTIAS) and the Shanghai Jiao Tong University School of Aeronautics and Astronautics. ICASSE 2019 provided a forum that brought together experts on aeronautics and astronautics to share new ideas and findings. These proceedings present high-quality contributions in the areas of aerospace system science and engineering, including topics such as trans-space vehicle system design and integration, air vehicle systems, space vehicle systems, near-space vehicle systems, aerospace robotics and unmanned systems, communication, navigation and surveillance, aerodynamics and aircraft design, dynamics and control, aerospace propulsion, avionics systems, optoelectronic systems, and air traffic management.

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### **DATA-DRIVEN MULTIVALENCE IN THE BUILT ENVIRONMENT**

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*Springer* This book sets the stage for understanding how the exponential escalation of digital ubiquity in the contemporary environment is being absorbed, modulated, processed and actively used for enhancing the performance of our built environment. S.M.A.R.T., in this context, is thus used as an acronym for Systems & Materials in Architectural Research and Technology, with a specific focus on interrogating the intricate relationship between information systems and associative material, cultural and socioeconomic formations within the

built environment. This interrogation is deeply rooted in exploring inter-disciplinary research and design strategies involving nonlinear processes for developing meta-design systems, evidence based design solutions and methodological frameworks, some of which, are presented in this issue. Urban health and wellbeing, urban mobility and infrastructure, smart manufacturing, Interaction Design, Urban Design & Planning as well as Data Science, as prominent symbiotic domains constituting the Built Environment are represented in this first book in the S.M.A.R.T. series. The spectrum of chapters included in this volume helps in understanding the multivalence of data from a socio-technical perspective and provides insight into the methodological nuances involved in capturing, analysing and improving urban life via data driven technologies.

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## **JOURNEY TO THE FUTURE**

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### **A BETTER WORLD IS POSSIBLE**

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*Agio Publishing House* In this blockbuster novel, young protagonist Patrick Wu visits a future world - Vancouver in 2032 - brimming with innovation and hope, where the climate crisis is being tackled, the solar revolution is underway and a new cooperative economy is taking shape. Dauncey's "brilliant book shows solutions to the climate crisis that offer a future rich in opportunity and joy" - scientist and award-winning broadcaster David Suzuki. Scientists, activists and politicians are enthusiastic in advance praise for Guy Dauncey's ecotopian novel, Journey To The Future. From Elizabeth May, NDP MP Murray Rankin and UK Green Party leader Caroline Lucas, to activists Tzeporah Berman, Angela Bischoff and Bill McKibben, and scientists David Suzuki, Andrew Weaver and Elisabet Sahtouris, the endorsements for Guy Dauncey's new book are united: Journey To The Future is a gamechanger that must be widely read. In this blockbuster novel, young protagonist Patrick Wu visits a future world - Vancouver in 2032 - brimming with innovation and hope, where the climate crisis is being tackled, the solar revolution is underway and a new cooperative economy is taking shape. But enormous danger still lurks. David R. Boyd, co-chair of Vancouver's Greenest City initiative, says Journey To The Future is "an imaginative tour de force, blending science, philosophy and fiction into a delightful story about how we can and must change the world." About the author, Guy Dauncey Guy Dauncey is a futurist who works to develop a positive vision of a sustainable future and to translate that vision into action. He is founder of the BC Sustainable Energy Association, and the author or co-author of ten books, including the award-winning Cancer: 101 Solutions to a Preventable Epidemic and The Climate Challenge: 101 Solutions to Global Warming. He is an Honorary Member of the Planning Institute of BC, a Fellow of the Findhorn Foundation in Scotland, and a powerful motivational speaker.

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## **INDIA 2021: CURRENT AFFAIRS YEARLY FOR UPSC PSC**

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*GRASP IAS* Current Affairs has become an integral part of a lot of entrance exams being conducted at the graduate and under-graduate levels. It is very important for students to remain updated on the current happenings in their surroundings especially those that are important from the perspective of India. Current Affairs Yearbook 2021, a thoroughly revised, reorganised and updated edition, presents a comprehensive study of all the sections that are covered under the subject of General Studies. The Yearbook 2021 provides the latest information & most authentic data reference material on Current Affairs and General Studies. It has specially been designed to cater to aspirants of various competitive exams like UPSC and State PSC Civil services Exams across the country. The material has been written in a lucid language and prepared as per the requirements of the various competitive exams 2020-21.

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## **THE VISIONARY: ELON MUSK**

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### **AN OUTSIDER'S GLIMPSE**

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*marino specogna* A compilation of the business life of Elon Musk from a third party interested person perspective gathered from news stories, Youtube video interviews and Twitter feeds. Elon Musk public life information, his business ventures, and some publicly disclosed information all compiled in one source for easy reference on the 21st Century leading visionary. Who could have imagined that the possibility existed to revamp electric vehicles from their demised dust bin of being the first automobiles to present day possible obliteration of combustion engine automobiles? Who would have thought that private companies, or public companies, would be able to move materials, satellites, and humans into space without government intervention? The boy who immersed himself in every fictional read during his young years, to being a personal computer age child, becomes the 21st century visionary. Elon Musk went from having "\$2,000 in his pocket" on moving to Canada when he was 17 years old, to pursue the American dream, to become a millionaire within 10 years, then a billionaire. Anyone can transform their current situation to a better situation without striving for billionaire status by learning how Elon Musk became who he is and his learning techniques .

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## PERSPECTIVES DES TRANSPORTS FIT 2019

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*OECD Publishing* Les perspectives des transports FIT donnent un aperçu des tendances récentes et des perspectives à court terme du secteur des transports au niveau mondial ainsi que des perspectives à long terme des demandes de transport jusqu'en 2050. L'analyse comprend le transport de marchandises (maritime, aérien et de surface) et de passagers (voiture, rail, air) ainsi que les émissions de CO2.

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## VISION

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### THE FIRST EDITION

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*Notion Press* This is the first edition of my 'Vision' series. 'Vision' is basically a perspective book, where I have laid out some ideas that I think would be good for the future. It is neither a prediction nor an idealistic aim, rather it can be thought of as a Utopian ideal. Many of the ideas in this edition might be nonsensical for some, but this is what is looked to be the future of India and the world by an optimistic teenage Indian boy. Electricity, the internet, airplanes, spaceships... all seemed too wild an idea at one time, but then there were people who went ahead and made it a reality. Hard work and intellect are obviously necessary, but that is not enough. What is required is to have a vision. This book covers eight main topics: Plans for Future Cities, Transportation, Garbage Management, Energy, the Space Industry, Farming, Banking, and Poverty. It is a mix of ideas, which I have been thinking about, and its implementation through current technological innovations and research. The book focuses on innovative solutions and methods that need focus rather than discussing the problem itself. Read on to know more about Blockchain, Fusion Reactors, Self-Driving Vehicles, Solar, Space Elevators, Hyperloop, and much more. The author puts forward a plan to integrate technological solutions for society, so that the world becomes a better place to live in. 'Vision' is meant to be a book to inspire others to think and work on innovative solutions for the future.

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## HYPERLOOP

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### STORIA E TECNOLOGIA DELLA CAPSULA DA 1.223 KM/H CHE RIVOLUZIONERÀ IL MONDO DEI TRASPORTI

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*Bruno Editore* Vi svelo un segreto: una rivoluzione è appena cominciata. Il mondo dei trasporti è in procinto di cambiare per sempre e, con esso, le vite di tutti noi. L'invenzione a cui attribuire il merito si chiama Hyperloop. Non si tratta dell'ennesimo treno super veloce, ma di un mezzo di trasporto completamente nuovo: il più rapido, efficiente e sostenibile che l'essere umano abbia mai ideato. Un aereo senza ali né coda, una capsula pressurizzata che, sfrecciando a pochi metri dal suolo, raggiungerà i 1.223km/h ridefinendo il nostro concetto di viaggio. Leggere questo breve manuale vi permetterà di avere uno scorcio reale su ciò che ci aspetta; di scoprire che cos'è Hyperloop, come funziona e tutti i vantaggi di questa nuova struttura che mette in discussione ogni singola dinamica degli attuali servizi di movimentazione urbana ed extraurbana. Siete pronti a salire a bordo? **LA MIA STORIA E LE ORIGINI DI HYPERLOOP** Come un "NO" può innescare i meccanismi in grado di condurre al successo. Hyperloop Transportation Technology: che cos'è e perché rivoluzionerà il mondo dei trasporti. Crowdsourcing: tutti i vantaggi di raccogliere le menti invece dei capitali. **C'ERA UNA VOLTA HYPERLOOP** Chi per primo propose, all'inizio del diciottesimo secolo, l'utilizzo dell'aria compressa come forza motrice nei sistemi di trasporto. Quali esperimenti, studi e prototipi seguirono negli anni, aiutando a perfezionarne questa tecnica e contribuendo alla soluzione raggiunta oggi. Perché tutti pensano che Elon Musk abbia inventato Hyperloop e qual è il reale contributo dell'imprenditore. **CHE COS'È HYPERLOOP E COME FUNZIONA?** Per quale motivo Hyperloop non può essere considerato un treno o equiparato alle esistenti modalità di trasporto. Quali sono le tecnologie impiegate da Hyperloop che lo rendono così innovativo. In che modo Hyperloop vuole porsi come il primo sistema di trasporti al mondo davvero profittevole. **I VARI HYPERLOOP NEL MONDO** Qual è il modo più efficace per ottenere il prodotto migliore nel minor tempo possibile. Per quale motivo abbiamo urgente bisogno di un nuovo sistema di trasporto. Quali sono le aziende pubbliche e private, oltre agli enti di ricerca, impegnate nella realizzazione di Hyperloop. **L'AUTORE** Con una vasta esperienza in Venture Capital, finanza, fusioni e acquisizioni, trasporti e media, Bibop Gresta è considerato a livello internazionale un esperto di mobilità avanzata e tecnologie della quarta rivoluzione industriale. È stato membro del consiglio di amministrazione di diverse società quotate nel Regno Unito, Germania e Italia e ha guidato lo sviluppo del business internazionale per varie società globali. In qualità di co-fondatore di Hyperloop Transportation Technologies (HTT), Gresta ha guidato un team di 800 professionisti in 40 paesi in 6 continenti. HTT è stata la prima azienda a iniziare lo sviluppo di Hyperloop™ ed è la più grande azienda mai costruita su un ecosistema aziendale collaborativo. Sotto la guida di Gresta, HTT ha rivoluzionato sia la mobilità che i tradizionali modelli di business. Nel 2018, il World Economic Forum lo ha dichiarato Technology Pioneer. Bibop è oggi un rispettato leader di pensiero nell'imprenditoria etica, transumanesimo e sostenibilità. Oltre ai suoi successi imprenditoriali, è un oratore di fama mondiale su questioni che vanno dagli investimenti etici alla mobilità avanzata. Bibop ha

partecipato a importanti eventi come il World Economic Forum, le Nazioni Unite, TedX, ed è apparso sui principali media del mondo come CNBC, CNN, Times, Forbes e MTV.

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#### **TRANSDISCIPLINARY ENGINEERING METHODS FOR SOCIAL INNOVATION OF INDUSTRY 4.0**

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#### **PROCEEDINGS OF THE 25TH ISPE INC. INTERNATIONAL CONFERENCE ON TRANSDISCIPLINARY ENGINEERING, JULY 3 - 6, 2018**

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*IOS Press* The concept of concurrent engineering (CE) was first developed in the 1980s. Now often referred to as transdisciplinary engineering, it is based on the idea that different phases of a product life cycle should be conducted concurrently and initiated as early as possible within the Product Creation Process (PCP). The main goal of CE is to increase the efficiency and effectiveness of the PCP and reduce errors in later phases, as well as incorporating considerations - including environmental implications - for the full lifecycle of the product. It has become a substantive methodology in many industries, and has also been adopted in the development of new services and service support. This book presents the proceedings of the 25th ISPE Inc. International Conference on Transdisciplinary Engineering, held in Modena, Italy, in July 2018. This international conference attracts researchers, industry experts, students, and government representatives interested in recent transdisciplinary engineering research, advancements and applications. The book contains 120 peer-reviewed papers, selected from 259 submissions from all continents of the world, ranging from the theoretical and conceptual to papers addressing industrial best practice, and is divided into 11 sections reflecting the themes addressed in the conference program and addressing topics as diverse as industry 4.0 and smart manufacturing; human-centered design; modeling, simulation and virtual design; and knowledge and data management among others. With an overview of the latest research results, product creation processes and related methodologies, this book will be of interest to researchers, design practitioners and educators alike.

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#### **HYPERCARGO. EIN DEUTSCHER HYPERLOOP NACH TRANSPERID UND CO?**

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#### **ÜBERLEGUNGEN ZU EINER GÜTERVERKEHRSUMSETZUNG FÜR ELON MUSKS BAHNBRECHENDE TECHNOLOGIE AUF DEUTSCHEM BODEN**

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*GRIN Verlag* Masterarbeit aus dem Jahr 2014 im Fachbereich BWL - Beschaffung, Produktion, Logistik, Note: 1,7, Helmut-Schmidt-Universität - Universität der Bundeswehr Hamburg, Sprache: Deutsch, Abstract: Die Menschheitsgeschichte ist eine Geschichte des Wandels und der Veränderung. Diese Geschichte zeigt sich in besonders ausgeprägter Form mit der Beginnenden immer stärker werdenden Verflechtung der internationalen Handelsbeziehungen nach 1950. Aus dem Wachstum der Handelsbeziehungen erwuchs eine stärker werdende Weltwirtschaft. Eine Entwicklung, die mit einigen Ausnahmen weiter signifikant anhält. Die Globalisierung der Wirtschaft führte aber auch dazu, dass der statistisch erfasste Warentransport zwischen den Jahren 1960 und 2012 um knapp das 16-fache und die Warenproduktion um mehr als das 4,5-fache anstieg. Neben dem Fortschritt der Weltwirtschaft hat sich in den letzten 62 Jahren auch die Technologiebranche maßgeblich gewandelt. Der Einzug des Computers in den Alltag und die zunehmende Vernetzung durch das Internet waren nur die Grundlage einer Vielzahl neuartiger Technologien. Doch während der Technologiefortschritt in nahezu allen Lebensbereichen des Menschen Einzug erhielt und bestehende Systeme durch neuartige, leistungsfähigere ersetzt, wurden bestehende statische Infrastrukturen wie Straßen und Schienen zu großen Teilen ausgebaut und erweitert, aber nicht ersetzt. Der resultierende Konflikt zwischen wachsendem Warentransport und limitierter Ausbaufähigkeit scheint bis heute ungeklärt. Mit dem Bewusstsein um diesen Konflikt wurden weltweit viele großartige Projekte gestartet. Im deutschsprachigen Raum haben sich mit CargoCab, Swisstromo und Transrapid drei beispielhafte Systeme für die Modernisierung der Infrastruktur durch den Einsatz von Hochtechnologien entwickelt. Ein weiteres solches Konzeptsystem, ist das Hypercargo-System. Basierend auf dem bahnbrechendem Personenbeförderungskonzept Hyperloop welches von Elon Musk, SpaceX und Tesla Motors erdacht wurde, ist das Hypercargo-System die gedankliche Weiterentwicklung für den Güterverkehr. Im Zuge dieser explorativen Fallstudie soll erstmals über eine Realisierung des Technologiekonzepts auf deutschem Boden gesprochen werden. Die Studie versteht sich dabei weit weniger als inhaltlich vollständiges Regelwerk zur Konfliktlösung, sondern als Anregung zur Diskussion.

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#### **INFRASTRUCTURAL OPTIMISM**

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*Routledge* *Infrastructural Optimism* investigates a new kind of twenty-first-century infrastructure, one that encourages a broader understanding of the interdependence of resources and agencies, recognizes a rightfully accelerated need for equitable access and distribution, and prioritizes rising environmental diligence across the design disciplines. Bringing together urban history, case studies, and speculative design propositions, the book explores and defines infrastructure as the basis for a new form of urbanism, emerging from the intersection of architecture, landscape architecture, and urban design. In defining this new infrastructure, the book introduces new dynamic and holistic performance metrics focused on "measuring what matters" over growth for the sake of growth and twelve criteria that define next generation infrastructure. By shifting the focus of infrastructure - our largest public realm - to environmental symbiosis and quality of life for all, design becomes a catalytic component in creating a more beautiful, productive, and optimistic future

**with Infrastructural Urbanism as its driver. Infrastructural Optimism will be invaluable to design, non-profit and agency professionals, and faculty and students in the fields of architecture, landscape architecture, and urban design, working in partnership with engineers, hydrologists, ecologists, urban planners, community members, and others who shape the built environment through the expanded field of infrastructure.**