Networks Crowds And Markets Solutions

Describes how patterns of information, knowledge, and cultural production are changing. The author shows that the way information and knowledge are made available can either limit or enlarge the ways people create and express themselves. He describes the range of legal and policy choices that confront.

Splintering Urbanism makes an international and interdisciplinary analysis of the complex interactions between infrastructure networks and urban spaces. It delivers a new and powerful way of understanding contemporary urban change, bringing together discussions about: *globalization and the city *technology and society *urban space and urban networks *infrastructure and the built environment *developed, developing and post-communist worlds. With a range of case studies, illustrations and boxed examples, from New York to Jakarta, Johannesberg to Manila and Sao Paolo to Melbourne, Splintering Urbanism demonstrates the latest social, urban and technological theories, which give us an understanding of our contemporary metropolis.

In recent years there has been an explosion of network data – that is, measu- ments that are either of or from a system conceptualized as a network – from se- ingly all corners of science. The combination of an increasingly pervasive interest in scienti c analysis at a systems level and the ever-growing capabilities for hi- throughput data collection in various elds has fueled this trend. Researchers from biology and bioinformatics to physics, from computer science to the information sciences, and from economics to sociology are more and more engaged in the c- lection and statistical analysis of data from a network-centric perspective.

Accordingly, the contributions to statistical methods and modeling in this area have come from a similarly broad spectrum of areas, often independently of each other. Many books already have been written addressing network data and network problems in speci c individual disciplines. However, there is at present no single book that provides a modern treatment of a core body of knowledge for statistical analysis of network data that cuts across the various disciplines and is organized rather according to a statistical taxonomy of tasks and techniques. This book seeks to ll that gap and, as such, it aims to contribute to a growing trend in recent years to facilitate the exchange of knowledge across the pre-existing boundaries between those disciplines that play a role in what is coming to be called 'network science. Networks of relationships help determine the careers that people choose, the jobs they obtain, the products they buy, and how they vote. The many aspects of our lives that are governed by social networks make it critical to understand how they impact behavior, which network structures are likely to emerge in a society, and why we organize ourselves as we do. In Social and Economic Networks, Matthew Jackson offers a comprehensive introduction to social and economic networks, drawing on the latest findings in economics, sociology, computer science, physics, and mathematics. He provides empirical background on networks and the regularities that they exhibit, and discusses random graph-based models and strategic models of network formation. He helps readers to understand behavior in networked societies, with a detailed analysis of learning and diffusion in networks, decision making by individuals who are influenced by their social neighbors, game theory and markets on networks, and a host of related subjects. Jackson also describes the varied statistical and modeling techniques used to analyze social networks. Each chapter includes exercises to aid students in

their analysis of how networks function. This book is an indispensable resource for students and researchers in economics, mathematics, physics, sociology, and business. In this fascinating book, New Yorker business columnist James Surowiecki explores a deceptively simple idea: Large groups of people are smarter than an elite few, no matter how brilliant—better at solving problems, fostering innovation, coming to wise decisions, even predicting the future. With boundless erudition and in delightfully clear prose, Surowiecki ranges across fields as diverse as popular culture, psychology, ant biology, behavioral economics, artificial intelligence, military history, and politics to show how this simple idea offers important lessons for how we live our lives, select our leaders, run our companies, and think about our world. This report analyzes domestic provision of safe water and improved sanitation to the poor in Bangladesh, Benin, Cambodia, Indonesia, Peru, and Tanzania, highlighting demand and supply factors and the commercial and policy constraints that face local enterprises supplying it. From one of the world's leading data scientists, a landmark tour of the new science of idea flow, offering revolutionary insights into the mysteries of collective intelligence and social influence If the Big Data revolution has a presiding genius, it is MIT's Alex "Sandy" Pentland. Over years of groundbreaking experiments, he has distilled remarkable discoveries significant enough to become the bedrock of a whole new scientific field: social physics. Humans have more in common with bees than we like to admit: We're social creatures first and foremost. Our most important habits of action—and most basic notions of common sense—are wired into us through our coordination in social groups. Social physics is about idea flow, the way human social networks spread ideas and transform those ideas into behaviors.

Thanks to the millions of digital bread crumbs people leave behind via smartphones, GPS devices, and the Internet, the amount of new information we have about human activity is truly profound. Until now, sociologists have depended on limited data sets and surveys that tell us how people say they think and behave, rather than what they actually do. As a result, we've been stuck with the same stale social structures—classes, markets—and a focus on individual actors, data snapshots, and steady states. Pentland shows that, in fact, humans respond much more powerfully to social incentives that involve rewarding others and strengthening the ties that bind than incentives that involve only their own economic self-interest. Pentland and his teams have found that they can study patterns of information exchange in a social network without any knowledge of the actual content of the information and predict with stunning accuracy how productive and effective that network is, whether it's a business or an entire city. We can maximize a group's collective intelligence to improve performance and use social incentives to create new organizations and guide them through disruptive change in a way that maximizes the good. At every level of interaction, from small groups to large cities, social networks can be tuned to increase exploration and engagement, thus vastly improving idea flow. Social Physics will change the way we think about how we learn and how our social groups work—and can be made to work better, at every level of society. Pentland leads readers to the edge of the most important revolution in the study of social behavior in a generation, an entirely new way to look at life itself. Computer science and economics have engaged in a lively interaction over the past fifteen years, resulting in the new field of algorithmic game theory. Many problems that are central to modern computer science, ranging from resource allocation in large networks to online advertising, involve

interactions between multiple self-interested parties. Economics and game theory offer a host of useful models and definitions to reason about such problems. The flow of ideas also travels in the other direction, and concepts from computer science are increasingly important in economics. This book grew out of the author's Stanford University course on algorithmic game theory, and aims to give students and other newcomers a quick and accessible introduction to many of the most important concepts in the field. The book also includes case studies on online advertising, wireless spectrum auctions, kidney exchange, and network management.

Discover how graph databases can help you manage and query highly connected data. With this practical book, you'll learn how to design and implement a graph database that brings the power of graphs to bear on a broad range of problem domains. Whether you want to speed up your response to user queries or build a database that can adapt as your business evolves, this book shows you how to apply the schema-free graph model to real-world problems. Learn how different organizations are using graph databases to outperform their competitors. With this book's data modeling, query, and code examples, you'll quickly be able to implement your own solution. Model data with the Cypher query language and property graph model Learn best practices and common pitfalls when modeling with graphs Plan and implement a graph database solution in test-driven fashion

Explore real-world examples to learn how and why
organizations use a graph database Understand
common patterns and components of graph
database architecture Use analytical techniques and
algorithms to mine graph database information
This is an exciting period for the book, a time of
innovation, experimentation, and change. It is also a
time of considerable fear within the book industry as
it adjusts to changes in how books are created and
consumed. The movement to digital has been taking
place for some time, but with consumer books
experiencing the transition, the effects of digitization
can be clearly seen to everybody. In Turning the
Page Angus Phillips analyses the fundamental
drivers of the book publishing industry - authorship,
readership, and copyright - and examines the effects
of digital and other developments on the book itself.
Drawing on theory and research across a range of
subjects, from business and sociology to
neuroscience and psychology, and from interviews
with industry professionals, Phillips investigates how
the fundamentals of the book industry are changing
in a world of ebooks, self-publishing, and emerging
business models. Useful comparisons are also made
with other media industries which have undergone
rapid change, such as music and newspapers. This
book is an ideal companion for anyone wishing to
understand the transition of the book, writing and
publishing in recent years and will be particularly

relevant to students studying publishing, media and communications.

A graduate-level, mathematically rigorous introduction to strategic behavior in a networked world. This introductory graduate-level text uses tools from game theory and graph theory to examine the role of network structures and network effects in economic and information markets. The goal is for students to develop an intuitive and mathematically rigorous understanding of how strategic agents interact in a connected world. The text synthesizes some of the central results in the field while also simplifying their treatment to make them more accessible to nonexperts. Thus, students at the introductory level will gain an understanding of key ideas in the field that are usually only taught at the advanced graduate level. The book introduces basic concepts from game theory and graph theory as well as some fundamental algorithms for exploring graphs. These tools are then applied to analyze strategic interactions over social networks, to explore different types of markets and mechanisms for networks, and to study the role of beliefs and higher-level beliefs (beliefs about beliefs). Specific topics discussed include coordination and contagion on social networks, traffic networks, matchings and matching markets, exchange networks, auctions, voting, web search, models of belief and knowledge, and how beliefs affect auctions and markets. An

appendix offers a "Primer on Probability."
Mathematically rigorous, the text assumes a level of
mathematical maturity (comfort with definitions and
proofs) in the reader.
Integrates social media, social network analysis, and
data mining to provide an understanding of the
potentials of social media mining.
The scientific study of networks, including computer
networks, social networks, and biological networks,
has received an enormous amount of interest in the
last few years. The rise of the Internet and the wide
availability of inexpensive computers have made it
possible to gather and analyze network data on a
large scale, and the development of a variety of new
theoretical tools has allowed us to extract new
knowledge from many different kinds of networks.
The study of networks is broadly interdisciplinary and
important developments have occurred in many
fields, including mathematics, physics, computer and
information sciences, biology, and the social
sciences. This book brings together for the first time
the most important breakthroughs in each of these
fields and presents them in a coherent fashion,
highlighting the strong interconnections between
work in different areas. Subjects covered include the
measurement and structure of networks in many
branches of science, methods for analyzing network
data, including methods developed in physics,
statistics, and sociology, the fundamentals of graph

theory, computer algorithms, and spectral methods, mathematical models of networks, including random graph models and generative models, and theories of dynamical processes taking place on networks. This volume offers a simple, systematic guide to creating a knowledge sharing practice in your organization. It shows how to build the enabling environment and develop the skills needed to capture and share knowledge gained from operational experiences to improve performance and scale-up successes. Its recommendations are grounded on the insights gained from the past seven years of collaboration between the World Bank and its clients around the world—ministries and national agencies operating in various sectors—who are working to strengthen their operations through robust knowledge sharing. While informed by the academic literature on knowledge management and organizational learning, this handbook's operational background and many real-world examples and tips provide a missing, practical foundation for public sector officials in developing countries and for development practitioners. However, though written with a public sector audience in mind, the overall concepts and approaches will also hold true for most organizations in the private sector and the developed world.

The new second edition of this forward-thinking text goes beyond the discussion of health disparities to

highlight the importance of health equity. As the title
suggests, Health Equity, Diversity and Inclusion:
Contexts, Controversies, and Solutions helps the
reader understand key social justice issues relevant
to health disparities and/or health equity, taking the
reader from the classroom to the real world to
implement new solutions. The new Second Edition
features: • Two new chapters: one on the impact of
urban education on urban health and another
covering the elderly and health equity •Updated and
enhanced coverage on men's health, demographic
data, the importance of cultural proficiency, maternal
mortality and Black women, and much more. •
Current trends and movements, including the role of
social media in the provision of health care
information for improved health literacy; mass
incarceration and criminal justice reform; and much
more.
"This book provides a rigorous and comprehensive
coverage of transportation models and planning
methods and is a must-have to anyone in the
transportation community, including students,
teachers, and practitioners." Moshe Ben-Akiva,
Massachusetts Institute of Technology.
What unites Google and Facebook, Apple and Microsoft,
Siemens and GE, Uber and Airbnb? Across a wide range
of sectors, these firms are transforming themselves into
platforms: businesses that provide the hardware and
software foundation for others to operate on. This

transformation signals a major shift in how capitalist firms operate and how they interact with the rest of the economy: the emergence of platform capitalism. This book critically examines these new business forms, tracing their genesis from the long downturn of the 1970s to the boom and bust of the 1990s and the aftershocks of the 2008 crisis. It shows how the fundamental foundations of the economy are rapidly being carved up among a small number of monopolistic platforms, and how the platform introduces new tendencies within capitalism that pose significant challenges to any vision of a post-capitalist future. This book will be essential reading for anyone who wants to understand how the most powerful tech companies of our time are transforming the global economy."

Upgrade your machine learning models with graph-based algorithms, the perfect structure for complex and interlinked data. Summary In Graph-Powered Machine Learning, you will learn: The lifecycle of a machine learning project Graphs in big data platforms Data source modeling using graphs Graph-based natural language processing, recommendations, and fraud detection techniques Graph algorithms Working with Neo4J Graph-Powered Machine Learning teaches to use graph-based algorithms and data organization strategies to develop superior machine learning applications. You'll dive into the role of graphs in machine learning and big data platforms, and take an in-depth look at data source modeling, algorithm design, recommendations, and fraud detection. Explore end-to-end projects that illustrate architectures and help you optimize with best design

practices. Author Alessandro Negro's extensive experience shines through in every chapter, as you learn from examples and concrete scenarios based on his work with real clients! Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Identifying relationships is the foundation of machine learning. By recognizing and analyzing the connections in your data, graph-centric algorithms like K-nearest neighbor or PageRank radically improve the effectiveness of ML applications. Graph-based machine learning techniques offer a powerful new perspective for machine learning in social networking, fraud detection, natural language processing, and recommendation systems. About the book Graph-Powered Machine Learning teaches you how to exploit the natural relationships in structured and unstructured datasets using graph-oriented machine learning algorithms and tools. In this authoritative book, you'll master the architectures and design practices of graphs, and avoid common pitfalls. Author Alessandro Negro explores examples from real-world applications that connect GraphML concepts to real world tasks. What's inside Graphs in big data platforms Recommendations, natural language processing, fraud detection Graph algorithms Working with the Neo4J graph database About the reader For readers comfortable with machine learning basics. About the author Alessandro Negro is Chief Scientist at GraphAware. He has been a speaker at many conferences, and holds a PhD in Computer Science. Table of Contents PART 1 INTRODUCTION 1

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graphs
This book offers detailed surveys and systematic
discussion of models, algorithms and applications for link
mining, focusing on theory and technique, and related
applications: text mining, social network analysis,
collaborative filtering and bioinformatics.
"A clear and crisply written account of machine
intelligence, big data and the sharing economy. But
McAfee and Brynjolfsson also wisely acknowledge the
limitations of their futurology and avoid over-
simplification." —Financial Times In The Second Machine
Age, Andrew McAfee and Erik Brynjolfsson predicted
some of the far-reaching effects of digital technologies
on our lives and businesses. Now they've written a
guide to help readers make the most of our collective
future. Machine | Platform | Crowd outlines the
opportunities and challenges inherent in the science
fiction technologies that have come to life in recent
years, like self-driving cars and 3D printers, online
platforms for renting outfits and scheduling workouts, or
crowd-sourced medical research and financial

instruments.

The Regulatory Technology Handbook The transformational potential of RegTech has been confirmed in recent years with US$1.2 billion invested in start-ups (2017) and an expected additional spending of US$100 billion by 2020. Regulatory technology will not only provide efficiency gains for compliance and reporting functions, it will radically change market structure and supervision. This book, the first of its kind, is providing a comprehensive and invaluable source of information aimed at corporates, regulators, compliance professionals, start-ups and policy makers. The REGTECH Book brings into a single volume the curated industry expertise delivered by subject matter experts. It serves as a single reference point to understand the RegTech eco-system and its impact on the industry. Readers will learn foundational notions such as: • The economic impact of digitization and datafication of regulation • How new technologies (Artificial Intelligence, Blockchain) are applied to compliance • Business use cases of RegTech for cost-reduction and new product origination • The future regulatory landscape affecting financial institutions, technology companies and other industries Edited by world-class academics and written by compliance professionals, regulators, entrepreneurs and business leaders, the RegTech Book represents an invaluable resource that paves the way for 21st century regulatory innovation.

August 6, 2009 Author, Jon Kleinberg, was recently cited in the New York Times for his statistical analysis research in the Internet age. Algorithm Design introduces

algorithms by looking at the real-world problems that
motivate them. The book teaches students a range of
design and analysis techniques for problems that arise in
computing applications. The text encourages an
understanding of the algorithm design process and an
appreciation of the role of algorithms in the broader field
of computer science.
Construct, analyze, and visualize networks with
networkx, a Python language module. Network analysis
is a powerful tool you can apply to a multitude of
datasets and situations. Discover how to work with all
kinds of networks, including social, product, temporal,
spatial, and semantic networks. Convert almost any real-
world data into a complex network--such as
recommendations on co-using cosmetic products, muddy
hedge fund connections, and online friendships. Analyze
and visualize the network, and make business decisions
based on your analysis. If you're a curious Python
programmer, a data scientist, or a CNA specialist
interested in mechanizing mundane tasks, you'll increase
your productivity exponentially. Complex network
analysis used to be done by hand or with non-
programmable network analysis tools, but not anymore!
You can now automate and program these tasks in
Python. Complex networks are collections of connected
items, words, concepts, or people. By exploring their
structure and individual elements, we can learn about
their meaning, evolution, and resilience. Starting with
simple networks, convert real-life and synthetic network
graphs into networkx data structures. Look at more
sophisticated networks and learn more powerful

machinery to handle centrality calculation, blockmodeling, and clique and community detection. Get familiar with presentation-quality network visualization tools, both programmable and interactive--such as Gephi, a CNA explorer. Adapt the patterns from the case studies to your problems. Explore big networks with NetworKit, a high-performance networkx substitute. Each part in the book gives you an overview of a class of networks, includes a practical study of networkx functions and techniques, and concludes with case studies from various fields, including social networking, anthropology, marketing, and sports analytics. Combine your CNA and Python programming skills to become a better network analyst, a more accomplished data scientist, and a more versatile programmer. What You Need: You will need a Python 3.x installation with the following additional modules: Pandas (>=0.18), NumPy (>=1.10), matplotlib (>=1.5), networkx (>=1.11), python-louvain (>=0.5), NetworKit (>=3.6), and generalizesimilarity. We recommend using the Anaconda distribution that comes with all these modules, except for python-louvain, NetworKit, and generalizedsimilarity, and works on all major modern operating systems. This book explores links and synergies between international trade and two of the most urgent challenges of the 21st century: achieving sustainable energy (i.e., energy that is affordable, secure, and clean) and mitigating climate change. It takes the unique approach of not only examining how international trade can help achieve energy and climate goals, but also the impact of emerging tools and technologies such as smart grids and

demand response, and the potential role and impact of citizens and prosumers. The book analyzes energy- and trade-related regulations in a range of jurisdictions to assess how conducive the regulation is towards achieving sustainable energy, and identifies gaps and overlaps in the existing legal framework.

A practical introduction to network science for students across business, cognitive science, neuroscience, sociology, biology, engineering and other disciplines.

Written by high performance computing (HPC) experts, Introduction to High Performance Computing for Scientists and Engineers provides a solid introduction to current mainstream computer architecture, dominant parallel programming models, and useful optimization strategies for scientific HPC. From working in a scientific computing center, the author

Are all film stars linked to Kevin Bacon? Why do the stock markets rise and fall sharply on the strength of a vague rumour? How does gossip spread so quickly? Are we all related through six degrees of separation? There is a growing awareness of the complex networks that pervade modern society. We see them in the rapid growth of the Internet, the ease of global communication, the swift spread of news and information, and in the way epidemics and financial crises develop with startling speed and intensity. This introductory book on the new science of networks takes an interdisciplinary approach, using economics, sociology, computing, information science and applied mathematics to address fundamental questions about the links that connect us, and the ways that our decisions can have consequences for others.

Networks pervade social and economic life, and they play a prominent role in explaining a huge variety of social and

economic phenomena. Standard economic theory did not give much credit to the role of networks until the early 1990s, but since then the study of the theory of networks has blossomed. At the heart of this research is the idea that the pattern of connections between individual rational agents shapes their actions and determines their rewards. The importance of connections has in turn motivated the study of the very processes by which networks are formed. In Connections, Sanjeev Goyal puts contemporary thinking about networks and economic activity into context. He develops a general framework within which this body of research can be located. In the first part of the book he demonstrates that location in a network has significant effects on individual rewards and that, given this, it is natural that individuals will seek to form connections to move the network in their favor. This idea motivates the second part of the book, which develops a general theory of network formation founded on individual incentives. Goyal assesses the robustness of current research findings and identifies the substantive open questions. Written in a style that combines simple examples with formal models and complete mathematical proofs, Connections is a concise and self-contained treatment of the economic theory of networks, one that should become the natural source of reference for graduate students in economics and related disciplines. Imprint. This up-to-the-minute book is a wake-up call to the corporate status quo, and presents a stunning tapestry of anecdotes, object lessons, parodies, ware stories and suggestions, all aimed at illustrating what it will take to survive and prosper in the fast- forward world on the wire. Should we pay children to read books or to get good grades? Should we allow corporations to pay for the right to pollute the atmosphere? Is it ethical to pay people to test risky new drugs or to donate their organs? What about hiring mercenaries to

fight our wars? Auctioning admission to elite universities?
Selling citizenship to immigrants willing to pay? In What
Money Can't Buy, Michael J. Sandel takes on one of the
biggest ethical questions of our time: Is there something
wrong with a world in which everything is for sale? If so, how
can we prevent market values from reaching into spheres of
life where they don't belong? What are the moral limits of
markets? In recent decades, market values have crowded out
nonmarket norms in almost every aspect of life—medicine,
education, government, law, art, sports, even family life and
personal relations. Without quite realizing it, Sandel argues,
we have drifted from having a market economy to being a
market society. Is this where we want to be?In his New York
Times bestseller Justice, Sandel showed himself to be a
master at illuminating, with clarity and verve, the hard moral
questions we confront in our everyday lives. Now, in What
Money Can't Buy, he provokes an essential discussion that
we, in our market-driven age, need to have: What is the
proper role of markets in a democratic society—and how can
we protect the moral and civic goods that markets don't honor
and that money can't buy?
Graph theory and the fields of natural language processing
and information retrieval are well-studied disciplines.
Traditionally, these areas have been perceived as distinct,
with different algorithms, different applications and different
potential end-users. However, recent research has shown
that these disciplines are intimately connected, with a large
variety of natural language processing and information
retrieval applications finding efficient solutions within graph-
theoretical frameworks. This book extensively covers the use
of graph-based algorithms for natural language processing
and information retrieval. It brings together topics as diverse
as lexical semantics, text summarization, text mining,
ontology construction, text classification and information

retrieval, which are connected by the common underlying theme of the use of graph-theoretical methods for text and information processing tasks. Readers will come away with a firm understanding of the major methods and applications in natural language processing and information retrieval that rely on graph-based representations and algorithms.

Over the past decade there has been a growing public fascination with the complex connectedness of modern society. This connectedness is found in many incarnations: in the rapid growth of the Internet, in the ease with which global communication takes place, and in the ability of news and information as well as epidemics and financial crises to spread with surprising speed and intensity. These are phenomena that involve networks, incentives, and the aggregate behavior of groups of people; they are based on the links that connect us and the ways in which our decisions can have subtle consequences for others. This introductory undergraduate textbook takes an interdisciplinary look at economics, sociology, computing and information science, and applied mathematics to understand networks and behavior. It describes the emerging field of study that is growing at the interface of these areas, addressing fundamental questions about how the social, economic, and technological worlds are connected.

How does the Internet really work? This book explains the technology behind it all, in simple question and answer format.

Economic and societal systems continually evolve as the needs and demands of society change. With the development of new technologies, research, and discoveries, various opportunities emerge for venture development and developing economies. Crowdfunding and Sustainable Urban Development in Emerging Economies provides innovative research on current issues in the rise of new platforms for

digital activities, a collaborative economy, crowdsourcing, crowdfunding, and other activities that are shaping developing countries. Highlighting a range of pertinent topics, such as infrastructure finance, tertiary educational institutions, and urban sustainability, this book is an important resource for academicians, practitioners, researchers, and students. The first book offering a systematic treatment of the economics of antitrust or competition policy. A fascinating deep dive on innovation from the New York Times bestselling author of How We Got To Now and Unexpected Life The printing press, the pencil, the flush toilet, the battery--these are all great ideas. But where do they come from? What kind of environment breeds them? What sparks the flash of brilliance? How do we generate the breakthrough technologies that push forward our lives, our society, our culture? Steven Johnson's answers are revelatory as he identifies the seven key patterns behind genuine innovation, and traces them across time and disciplines. From Darwin and Freud to the halls of Google and Apple, Johnson investigates the innovation hubs throughout modern time and pulls out the approaches and commonalities that seem to appear at moments of originality. These lecture notes provide a mathematical introduction to multi-agent dynamical systems, including their analysis via algebraic graph theory and their application to engineering design problems. The focus is on fundamental dynamical phenomena over interconnected network systems, including consensus and disagreement in averaging systems, stable equilibria in compartmental flow networks, and synchronization in coupled oscillators and networked control systems. The theoretical results are complemented by numerous examples arising from the analysis of physical and natural systems and from the design of network estimation, control, and optimization systems.

Read Online Networks Crowds And Markets Solutions