Toumetis

INDUSTRIAL AI
DELIVERED

INSIGHTS IN TIME CAN SAVE YOUR BOTTOM LINE

Together with Toumetis, you can harness the power of data to command the toughest industrial challenges.

Predict. Prevent. Prescribe. Profit.

Modern industries of all types are up against a wall. Demands for more value from operations can no longer be met by working harder to solve problems after they've occurred. Enter industry 2.0: using preventative machine learning to work smarter, and deep learning to extract ever more value. Toumetis has proven tools and expertise to empower your team with clear insights and prescriptive formulas to make effective operational breakthroughs.

A Holistic, Scalable Approach That's Proven In the Field.

Toumetis brings you 70 collective years of team experience applying industrial IoT machine learning and AI deep learning algorithms. Our Cascadence™ platform is field-proven to be simple and effective across devices and nodes. Our consulting style and agile process offer a holistic approach that aligns our experts with yours, helps implement and manage change, and lets you scale over time.

Who We Are and How We Work.

We're a global company with offices in the U.S. and the U.K. Our solutions have brought breakthroughs in cost and efficiency for Fortune 1000 companies in oil and gas, manufacturing, energy, mining, telecom, utilities, and more. Our core scope of capabilities includes:

- **Machine Learning**—engines involve anomaly detection, failure prediction, failure prescription, and remaining useful life
- **Machine Vision**
- **Natural Language Processing** (NLP)
- **Data Engineering**
- **Control Systems Optimization**
- **Accelerating the development of OSIsoft PI Asset Framework**
- **Implementation and Change Management**

ADVANCED MACHINE LEARNING. PROVEN INDUSTRIAL RESULTS.

- 2 to 4% production improvement for an ocean oil platform

- $10 million production value increase for an industrial manufacturer

- Millions in maintenance cost savings from one focused 3-month project

- 85 days of early warning of ESP failure of a major air transportation fleet

- Agile cycle of just 12 weeks from proof -of-value to ready-to-deploy plan

"...we hoped we could reduce unplanned losses by 20% per year with machine learning. With your solution we are able to achieve this number. This is a great opportunity for our company..."
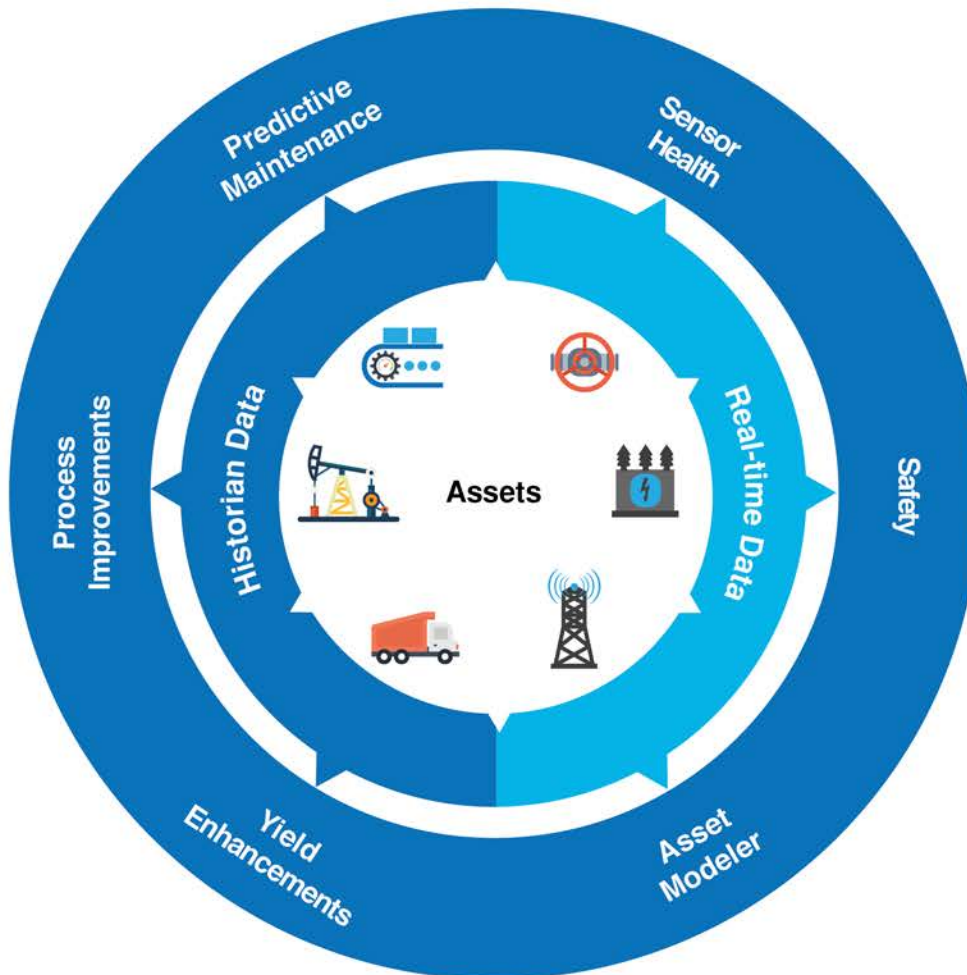
—Head of Maintenance, Multinational Oil Company

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cascadence™

A SILVER BULLET FOR YOUR TOUGHEST PROBLEMS

Actionable insights from advanced machine learning.

Extremely efficient algorithms in our Cascadence™ platform extract and analyze time-series data to identify patterns, predict performance, give real-time visualization to operators, and provide "visual twin" interactive equipment environments.

Toumetis deploys a unique platform built for industry, powered by Cascadence™. We bring together your multiple data sources and human expertise to create and deploy models to predict and isolate failures, improve processes, optimize production, and advance machine learning for greater insights. Even when legacy data sets lack pre-existing failures, we can apply unsupervised leaning to find faults and tag failures with your SMEs.
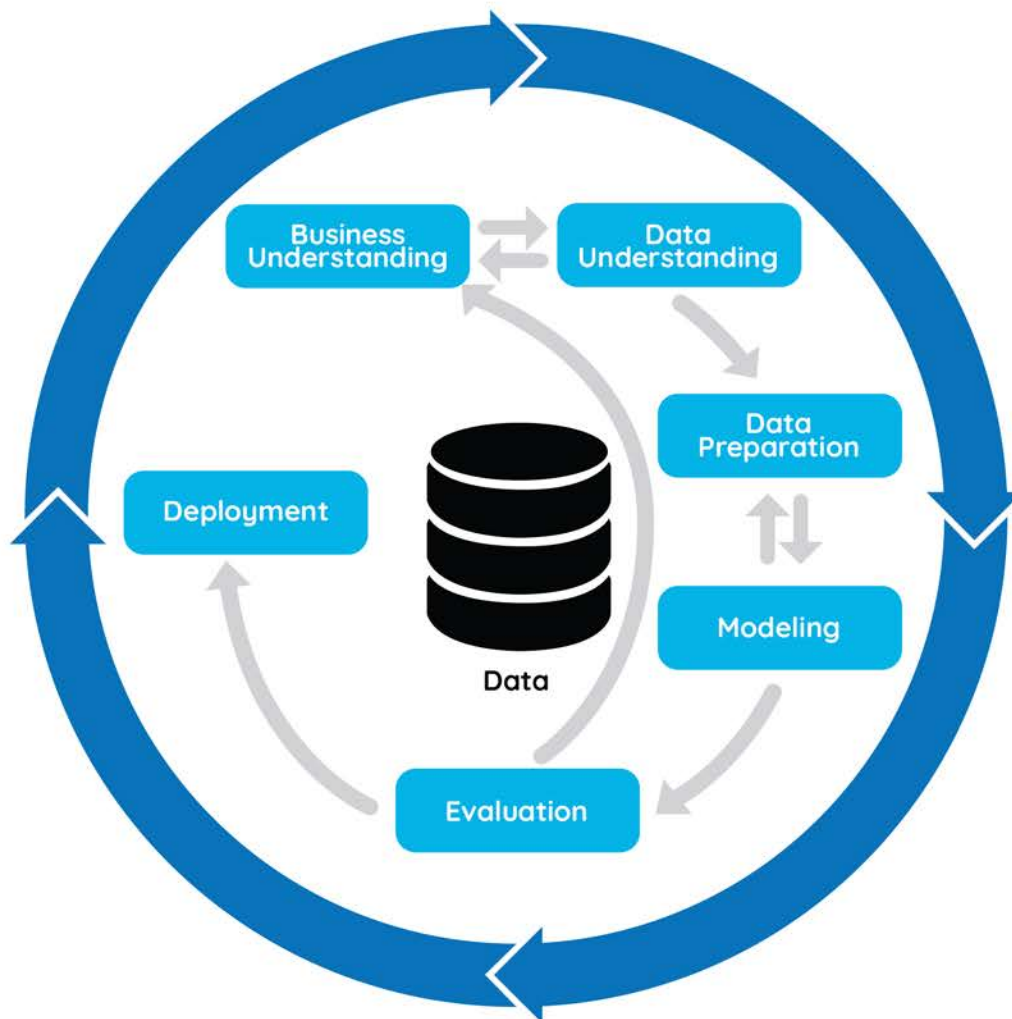
Your big operational breakthroughs come when you move from failure detection to predictive, preventive, and prescriptive solutions. Our proven approach helps you onboard data from CMMS and SCADA systems, apply advanced machine learning algorithms, and create a powerful predictive maintenance model designed with the specific realities of your industry in mind. Cascadence gives your SMEs unified dashboards and intuitive work-flows to annotate and interact with the data—and gain priceless insights that can transform operational efficiency and value.

"We see incredible potential across our fleet of ESPs using Toumetis anomaly detection, and managing our well workovers via their remaining -useful-life algorithms."

—Fleet Technical Authority, International Oil Company, Middle East

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WE THRIVE ON THE IMPOSSIBLE

The power of advanced machine learning and AI in industrial IoT applications can be a true game changer. It can enable you to prevent disasters while achieving efficiency and return on operations that weren't possible even a few years ago. Making a remarkable difference is what excites us and brings us great satisfaction.

In this new field, real-world experience and proven results are as mission critical as they are scarce. We've teamed up to solve many industrial IoT challenges, and know what it takes, not only to establish advancements in machine learning and artificial intelligence, but also to manage change. We bring tough-to-find depth of industry knowledge, project management techniques such as agile, and time-tested success implementing new cultures, systems, and processes with operations teams. From initial scope to full-circle process improvement, we're ready to quantify the value you can gain and help you harness today's most advanced data-driven solutions to operate at a breakthrough level.

"There was a steady increase to 5% improvement on our throughput by implementing Toumetis' solutions."

—Asset Manager,
   Mining Company

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FORTIFY YOUR EXPERT TEAM WITH OUR EXPERTISE

Mark Willnerd
CEO & President
Mark has worked in the mobile arena for two decades, including positions as senior vice president at Mobile Solutions Group and Boise site manager for iAnywhere, a Sybase company. Prior to that he was mobile vice president of business development and, earlier, VP of product management at Extended Systems. Mark holds a B.S. in electrical engineering from the University of Wyoming and is a graduate of the Stanford Executive Program.

Paul Seccombe, PhD
Vice President of Sales,
Customer Engagement & Marketing
Paul has over 25 years of experience in heavy industry including oil and gas (up-, mid- and down-stream), chemicals, power generation, and transport and logistics. Paul has held leading roles at GE and Aspentech & Invensys (now Schneider Electric). He holds a PhD in (Bio)Chemical Engineering from the University of Wales, Swansea.

Chee Su Goh, PhD
Director of Data Science
Chee Su has over 10 years of industrial experience in oil and gas as well as aerospace, having been a rotating equipment engineer with Shell and an R&D engineer and manager with Leonardo Helicopters. Chee Su holds a PhD in fluid mechanics from Imperial College London, and an MEng from the University of Cambridge.

Steve Henshaw, PhD
VP of Product Delivery
Steve has managed and led development teams for 10 years. He has designed, built and delivered enterprise software solutions across a range of industries including aviation and electricity generation before joining Toumetis. As consultant, Steve has worked closely with senior stakeholders to identify requirements and manage projects. He holds a PhD in Atmospheric Chemistry from the University of Bristol.

Dave Holladay
Vice President of Engineering
Dave Holladay has 20 years of experience in mobile software. He worked with the founders of Toumetis prior to the formation of the company. In a previous role at Sybase, he was senior architect and developer for the company's device encryption and security products. Dave holds a degree in Computer Science from Cambridge University.

Andreas Katsavos
Vice President of Consulting
Andreas has over 10 years of leadership experience in Software Architecture, Project Management and Product Engineering. He has an extensive hands on technical background in both server and client side. Prior to being employed at Toumetis he worked for 5 years in the Banking Industry delivering critical software solutions in the midst of the recent financial crisis. He holds a degree in Computer science and Engineering from the University of Ioannina.

Elena Hensinger, PhD
Senior Data Scientist
Elena has been working in the areas of IT and applications of machine learning for the past 8 years. With academic and entrepreneurial experience and an international background, her experience range includes automatic news preference detection, analysis of London's infrastructure projects, and prediction of IIoT system failures. Elena holds a PhD in Computer Science from the University of Bristol.

Joanne Kitson, PhD
Senior Data Scientist
Joanne practiced law before attaining MEng and PhD degrees in electrical and electronic engineering at the University of Bristol specialising in the field of power electronics, control and power distribution and microgrids. She has since focused on solving a range of data science and machine learning problems using a wide range of data including image frames, video, and time series.

Edward Rowland, PhD
Data Scientist
Edd brings 5 years of experience in data science in the public sector. Before joining Toumetis in 2020, he worked as a data analyst/scientist in the UK civil service at Ofsted and the Office for National statistics. Edd excels at applying scientific rigor, developing novel solutions to challenging problems, and integrating current trends with emerging innovations in machine learning for our customers. Edd holds a PhD in Neuroscience from Royal Holloway, University of London.

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OUT OF THE BOX, OR OUTSIDE THE BOX, WE BRING YOU BOTH

Our solution scales from visualization and detection to AI modeling of the most complex industrial systems—built on cost-opportunity analysis and ensuring proof of value. Our machine learning templates are shown on the following pages. Note: Some asset specific templates, although labeled with OEM specifics, can usually be tailored to other OEMs provided their designs are similar. If not, we can typically re-purpose these templates rapidly as some 80% of designs are similar.

Toumetis Machine Learning Templates—Available

TYPE & ASSET	ANOMALY DETECTION	FAILURE PREDICTION	PRESCRIPTIVE DIAGNOSTIC	REMAINING USEFUL LIFE	CUSTOM
TURBINES / ENGINES					
COMBUSTION TURBINE	√	√	√		√
STEAM TURBINE O&G/PG	√	√	√		√
AERO ENGINE	√	√	√		√
WIND TURBINE	√	√	√	√	√
RECIPROCATING ENGINE	√	√	√		√
MARINE ENGINE / GENERATOR	√	√	√		√
MECH INTERFACES					
GEARBOX	√	√	√	√	√
COUPLING	√	√	√		√
DRIVES					
DRIVES ELECTRIC MOTOR (LARGE)	√	√	√		√
ELECTRIC MOTOR (SMALL)	√	√	√		√
TOP DRIVE	√	√	√	√	√
MARINE THRUSTER	√	√	√		√
DRIVEN					
CENTRIFUGAL COMPRESSOR	√	√	√	√	√
RECIPROCATING COMPRESSOR	√	√	√	√	√
CENTRIFUGAL PUMP	√	√	√	√	√
ELECTRIC SUBMERSIBLE PUMP	√	√	√	√	√
CONVEYOR	√	√	√		√
STATICS					
PROCESS LINE UP - PERFORMANCE	√	√	√		√
HEAT RECOVERY STEAM GENERATOR	√	√	√		√
SEPARATOR	√	√	√		√
HEAT EXCHANGER	√	√	√	√	√
CONDENSER	√	√	√	√	√
MAIN CRYOGENIC HEAT EXCHANGER	√	√	√	√	√
CRUDE FURNACE	√	√	√		√
PROCESS COLUMN	√	√	√		√
MOVING ASSETS					
ASSETS LOCOMOTIVE ELECTRIC	√	√	√		√
LOCOMOTIVE DIESEL	√	√	√		√
QUAY CRANE	√	√	√		√
POWER TRANSMISSION SUBSTATION					
SUBSTATION	√	√	√	√	√

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CONTACT US

Toumetis has offices in Europe's data-science hotbed Bristol, UK, and in America's fastest growing city, Boise, Idaho.

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