AT Dynamics Ltd

CEO: Dr Kogila Balakrishnan
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1. Introduction

We would like to introduce you to the services and courses available from our company AT Dynamics Ltd. We are a premier training institute in Saudi Arabia and the region and offer a wide range of advanced short courses, up to postgraduate and industrial expert. Our courses focus on building a resilient workforce in strategic industry sectors, including AI, cyber security and emerging technologies. Building on our global strength, our aim is to collaborate with key government and industry stakeholders to support their vision in building world-class human capital.

This document outlines the current range of courses and services that AT Dynamics Ltd can provide.

We are a Riyadh based company, specializing in advanced and executive level: Cyber Security, Policy, AI and Technology short courses. As a company we have a unique set of capabilities:

- Direct experience in providing a wide range of advanced short courses within Saudi Arabia.
- Excellent links to multiple organizations: spanning government, industry, think tanks and top-rank academia.
- Expert knowledge of civil and security policy and technology requirements.
- Significant international experience spanning: Asia, Europe, and North America.
- Access to a pool of highly skilled and experienced tutors and practitioners.
- With specific expertise in advanced AI and emerging technologies, including the Cyber Security domain.

The company directors all have in-depth experience in industry and government and possess experience as university lecturers. Our company engages closely with each client to understand their specific needs and requirements and will shape all content to reflect such needs.

Our CEO and academic lead, Dr Kogila Balakrishnan, has experience in Corporate, Government and Academic sectors. She is also the Director for Client and Business Development (East Asia) at WMG, University of Warwick. She was instrumental in the development of Malaysia's national defense offsets policy and retired as the Under Secretary for Defense Industry at the Malaysian Ministry of Defense in 2016.

She obtained her PhD in offsets and technology policy from the Defense College of Management and Technology, Cranfield University, UK Defense Academy. She is the author of the leading book: *Technology offsets in international defense procurement.* (Routledge pub. 2018).

Our co-founder, Engineer Turki Al-Ajmi, is a highly dedicated, and professional Defense manufacturing and nuclear engineer with years of combined experience in project

management, Defense systems & technology. Turki is a respected leader in Saudi Arabia and the MENA region, covering strategic projects in the Defense and nuclear sector, with both local and international organizations, covering all levels including strategy, goals, and operating models.

Our technical delivery lead is Dr Robert Hercock (BSc, MSc, PhD, Fellow IET), who possesses experience as a Chief Research scientist, and is a Visiting Fellow at Pembroke College Oxford University. He is also a strategic advisor on AI to the UK MoD and has directed numerous complex research and development projects. He is also an experienced lecturer, mentor and respected keynote speaker in: AI, Cyber Security and Emerging Technologies; and has filed over 150 patents in these fields.

> **Why AT Dynamics Ltd?**
> The company brings together a world-class team of practitioner experts who possess deep skills across industrial, academic and high-level policy setting experience in government. We are experienced at bridging practice and theory to address real-world challenges. We combine concepts, frameworks and expert knowledge, based on a systems approach, spanning complex problems in a global context.

Company Ethos

We offer our clients the highest levels of trust, confidentiality and technical excellence.

2. COMPANY OVERVIEW

As a new company we offer a range of short courses. Specifically in the core domains of:

- Cyber Security,
- Artificial Intelligence and emerging technologies
- Applied Complex Systems.
- Offsets and Industrial Policy (IPP)

In the technology arena, our tutors have extensive, hands-on experience in dual-use applications of: Artificial Intelligence, Complex Systems Thinking, Cyber Security and Emerging Technologies.

From a policy perspective we can provide training in security strategy, policy and industrial development or Offsets.

These services can be provided via training packages, in a highly bespoke and tailored service to meet each client's unique requirements. We also have a broad selection of highly skilled tutors and practitioners in these fields, who will provide the course delivery.

3. COURSES OUTLINE

In this section we outline a sample of the key courses that we currently offer. We are also able to create new customized courses for specific client requirements. Please get in touch if you have a specific course requirement that is not listed below. (At present all courses are delivered in English, and advanced English language is a pre-requisite for all modules.

Current courses are also aimed at advanced learners with either industrial experience, or postgraduate level education.) We can offer courses to suit a range of class sizes, which typically range from 10 to 100 students.

Level: most courses can be planned to have a basic level, with an optional advanced level for suitable courses. This can be arranged over a flexible day schedule as required. The courses provide students with a basic certificate, on completion of a full multi-module course.

Training
In line with the Kingdom's human capital development strategy, we are committed to full localization of course delivery and Training-of-Trainers (TOT) as part of any package. Please contact us to discuss the alignment and delivery of any TOT as required.

Course Delivery

Teaching methods
Each module includes a set of taught lectures, followed by a practical team exercise in which student groups address a challenge task based on the module contents. Students are required to create and present as a team their challenge analysis. This may be to the wider student cohort or tailored to suit the specific course requirements. Each student can be assigned individual coursework if required, depending on the course level.

Learning Outcomes
The primary learning outcomes are focused on communication of the challenges inherent within each topic and how best practice can be applied to deliver optimal solutions in the real world. The aim is to transfer real life skills to each student, to enable them to immediately apply their learning from the modules.

Course Assessment
Online post module feedback forms will capture each student's personal learning and response to the course material. In addition to providing student assessment of the course quality and delivery, for use by the client and tutors, to improve future course content.

Course Pricing
The pricing for each course can be tailored to suit the specific client requirements. See contact details at the end of the document for details on how to get in touch.

4. SUMMARY

As a small company we offer a unique set of bespoke training and education services, carefully tailored to meet the student's needs. These can encompass a wide range of student backgrounds and experience.

We aim to communicate our passion for these subjects with the students, via engaging dialogue, practical examples and focused tutor led group work. Student feedback from our first set of short courses delivered in the Kingdom was universally positive.

Please get in touch for further information or to discuss any course requirements.

Annex A outlines in detail one of our planned senior courses on:
AI and Defense Strategy for early 2026.

While Annex B covers a sample range of the additional courses we currently offer.

Annex A: Artificial Intelligence for Strategy and Industrial Investment Policy

This set of courses are aimed at executive and senior level staff who are engaged in planning strategy or industrial development. The courses provide a high-level overview of how the emerging domain of Artificial Intelligence (AI) is shaping the technology landscape.

Target Audience: Executive and senior-level strategists, policy makers, and industrial development planners

Duration: 5-7 days (40-50 contact hours), to be agreed as required.
Format: Modular structure with lectures, case studies, strategic exercises, and expert panels

Course A1: AI Technology and Applications

Duration: 16 hours (maybe expanded to cover 3 days if required).

Rationale

Artificial intelligence is rapidly transforming the character of industrial and commercial development. However, the challenge for all organisations is no longer simply understanding AI technologies, but making informed strategic, procurement, and governance decisions under uncertainty. AI introduces new forms of operational advantage alongside significant risks related to integration, interoperability, lifecycle costs, ethics, and intellectual property.

This course is designed to equip professionals, policymakers, and procurement leaders with a systems-level understanding of AI, bridging the gap between technical concepts and strategic decision-making. Rather than focusing narrowly on algorithms, the course examines how AI shapes government and private sector strategy, design, procurement, organisational structures, and long-term investment choices.

By integrating technology fundamentals, procurement strategy, systems thinking, and future foresight, the course enables participants to critically evaluate AI-enabled capabilities and to align technology adoption with national security objectives, institutional constraints, and ethical responsibilities.

Key topics:

History and nature of AI. (Module M1)
- Foundations of Artificial Intelligence
- AI Capabilities and Limitations
- Technical Architecture Overview

The emerging role of AI in strategy. (M2)
- Strategic Applications of AI
- Comparative Global AI Initiatives
- Strategic Advantages
- Case Studies

Critical planning and evaluation of AI in. (M3)
- Requirements Definition and Validation
- Risk Assessment and Mitigation
- AI Acquisition and Procurement Strategy
- Integration and Interoperability

Systems level analysis of AI impact. (M4)
- Operational Impact Assessment
- Systems Thinking
- Lifecycle Cost Analysis
- Unintended Consequences and Second-Order Effects

Future of AI in strategic planning (M5)
- Emerging AI Technologies and Trends
- Strategic Foresight and Planning
- Long-term Investment Horizons
- Ethical and Societal Considerations
- Strategic Recommendations – group work

Technology Innovation, Risk and Intellectual Property (M6)
- Origin of innovation
- Risk management in technology creation
- Intellectual Property

Complex Systems (M7)
- Complex Systems Background
- Policy Examples
- Research Frontiers
- Quantum Computing

Learning Outcomes: This course provides participants with a core technical awareness of AI applications and emerging technologies. It will provide a system-level understanding of artificial intelligence and its implications for modern planning, procurement, and governance.

It bridges technical awareness with strategic decision-making by examining AI applications, acquisition, risk management, and organizational adaptation.

Through a combination of case studies, systems thinking, and future-oriented analysis, participants gain the tools to evaluate AI-enabled capabilities, manage technological and ethical risks, and align long-term AI investments with national security objectives and institutional constraints.

Course 2: Geo-political Considerations for AI Deployment
Duration: 16 hours

Rationale:

The deployment of artificial intelligence is increasingly shaped by geopolitical dynamics, alliance politics, and international legal and normative frameworks. Military AI capabilities are developed and employed within a global environment characterized by strategic competition, technology races, export controls, and complex alliance relationships.

This course provides participants with a structured understanding of how international norms, governance regimes, and geopolitical rivalries influence national choices on AI adoption. It equips defense and security professionals to assess the implications of technology sharing, dependency risks, and sovereignty constraints, while balancing operational effectiveness with legal, ethical, and diplomatic responsibilities.

Key Topics:
International Norms and Governance
• UN on lethal autonomous weapons systems (LAWS)
• Geneva Conventions and law of armed conflict implications
• Export controls and technology transfer regimes
• Export controls and technology transfer regimes
• Historical examples

Alliance Dynamics and Technology Sharing
• NATO AI cooperation frameworks
• Five Eyes intelligence sharing and AI
• Technology transfer to partner nations
• Balancing security with allied interoperability
Strategic Competition and Technology Races
• AI as a domain of great power competition
• First-mover advantages vs. fast-follower strategies
• AI arms race dynamics and escalation risks
Sovereignty and Dependency Risks
• Reliance on foreign AI technology and platforms
• Data sovereignty and national security
• Supply chain dependencies (semiconductors, cloud infrastructure)
Ethical and Legal Frameworks
• Meaningful human control concepts
• Accountability for AI-driven decisions
• International humanitarian law compliance
• National ethical guidelines development

Learning Outcomes: By the end of this course, the participants will be able to analyze and navigate the complex geopolitical landscape of military AI, access the impact if international norms, alliances and export control regimes on capability development and evaluate roles related to sovereignty, data control and supply chain dependency. Participants will also be able to apply ethical and legal frameworks to AI-enabled military operations and develop strategies that align national AI capabilities with international obligations, alliance interoperability and long terms security interest,

Course 3: Systems Level Analysis of AI Impact
Duration: 16 hours

Rationale

Artificial intelligence is not a standalone capability but an enabling technology that reshapes systems at the enterprise level, affecting operations, costs, organizations, and strategic stability.

By integrating operational analysis, modelling and simulation, lifecycle cost assessment, and organizational change, the course equips participants to understand the full systemic impact of AI adoption. Attention is given to second order and unintended effects, including risks, cyber vulnerabilities, and over-dependence on AI, enabling more resilient and informed defense planning.

Key Topics:
System-of-Systems Perspective
•   AI as an enabling technology across platforms
•   Network effects and emergent capabilities
•   Distributed AI architectures vs. centralized processing
Operational Impact Assessment
•   Modelling and simulation
•   AI contribution analysis
Lifecycle Cost Analysis
•   Total cost of ownership for AI systems
•   Development, deployment, and sustainment costs
•   Return on investment metrics for AI programs
Organizational challenges
•   Organizational restructuring for AI integration
•   Training and education transformation requirements
•   Cultural change management in organizations
Unintended Consequences and Second-Order Effects
•   Vulnerability to systemic failures & Cyber Impact
•   Dependence on AI and degraded operations

Learning Outcomes: By the end of this module, participants will be able to analyze AI-enabled capabilities using a system-of-systems framework, assess operational and organizational impacts through modelling, simulation, and evaluate the full lifecycle costs and returns of AI investments. Participants will also be able to anticipate systemic risks

associated with AI integration, and apply these insights to support robust, resilient, and sustainable decision-making.

Course 4: AI and Human Capability Development and Requirements

Duration: 3 days

Rationale:

In the race for AI adoption, the key challenge is no longer about whether AI can be deployed successfully, but on how human capability, judgement and institutional responsibility are preserved and strengthened alongside automation. AI systems reshape skills requirement, decision making processes. These factors raise operational, ethical and organizational questions.

This module shows how AI is not just about technology but is about a socio-technical transformation of organizations. It is a question of where operational effectiveness depends on well-designed man-machine or human-AI teaming, workforce strategies, education systems and ethical governance.

Key Topics:
Human-AI Teaming Concepts
•   Levels of automation and human control
•   Complementary strengths: human judgment + machine processing
•   Trust calibration and appropriate reliance on AI
Workforce Transformation
•   Changing skill requirements for military personnel
•   AI literacy across all ranks and specialties
•   Specialized AI roles: data scientists, ML engineers, AI ethics officers
•   Continuous learning and adaptation requirements
Training and Education Programs
•   AI education for senior leaders and decision-makers
•   Technical training for operators and maintainers
•   Professional military education curriculum updates
•   Simulation and synthetic training environments using AI
Cognitive and Psychological Factors
•   Automation bias and complacency risks
•   Decision-making under AI support
•   Ethical decision-making frameworks for personnel
Personnel Retention and Career Development
•   Career pathways for AI-skilled military and civilian personnel
•   Recruitment strategies for AI talent
•   Partnerships with industry and academia for talent development

Learning Outcomes: By the end of this module, participants will develop human capital strategies that complement AI investments and maintain human judgment at critical decision points. They will access cognitive, ethical, organizational risks associated with AI adoption, to be able to develop education and career pathways for AI skilled personnel and integrate

human capital strategies with institutional governance to ensure accountable, sustainable defense capability development.

Course Materials and Resources

This comprehensive course plan provides executives with both the technical understanding and strategic frameworks needed to make informed decisions about AI.

Artificial Intelligence and National Security
Congressional Research Service, Kelley M. Sayler (2020, updated regularly)

Why Essential: Comprehensive overview of AI applications in national security, policy considerations, and congressional perspectives on funding and oversight. Accessible to non-technical audiences while maintaining analytical rigor.

Key Takeaways: Legislative context, funding mechanisms, interagency coordination challenges, and comparative international approaches.

The Age of AI: And Our Human Future
Henry Kissinger, Eric Schmidt, and Daniel Huttenlocher (2021) (Available on Amazon).

Why Essential: Written by a former Secretary of State, former Google CEO, and MIT dean, this book bridges technology, strategy, and philosophy. Explores how AI transforms security, governance, and human society.

Key Takeaways: Strategic implications of AI for geopolitics, the need for new conceptual frameworks, and the challenges AI poses to traditional statecraft.

Technical Foundations and Capabilities

Artificial Intelligence: A Guide for Thinking Humans
Melanie Mitchell (2019) (Amazon)

Why Essential: Demystifies AI for intelligent non-specialists. Separates hype from reality and explains what AI can and cannot do, making it invaluable for Defense executives evaluating vendor claims.

Key Takeaways: Understanding of machine learning fundamentals, AI limitations, and the "brittleness" problem in real-world deployment.

Human Compatible: Artificial Intelligence and the Problem of Control
Stuart Russell (2019)

Why Essential: Written by a leading AI researcher, addresses fundamental questions about AI alignment, control, and safety—critical for Defense applications where failures can be catastrophic.

Key Takeaways: The value alignment problem, risks of goal misspecification, and designing AI systems that remain beneficial even as they become more capable.

The Oxford Handbook of AI Governance
Edited by Justin B. Bullock, et al. (2022)

Why Essential: Scholarly yet practical examination of AI governance across multiple domains including Defense. Multiple expert perspectives on regulation, standards, and oversight.

Key Takeaways: Governance frameworks, multi-stakeholder approaches, technical standards development, and audit mechanisms for high-stakes AI systems.

Winning the Tech Talent Competition Without STEM Immigration Reforms, the United States Will Not Stay ahead of China. Remco Zwetsloot, Center for Strategic and International Studies (CSIS), 2021. https://www.csis.org/analysis/winning-tech-talent-competition

Why Essential: Addresses the critical challenge of attracting and keeping AI talent in government. Compares approaches across allied nations.

Future Trends and Strategic Foresight

2084: Artificial Intelligence and the Future of Humanity
John C. Lennox (2020), and, "The National Security Commission on Artificial Intelligence Final Report" (2021). https://reports.nscai.gov/final-report/

Why Essential: Combining philosophical examination (Lennox) with comprehensive policy recommendations (NSCAI), these provide both long-term perspective and actionable near-term guidance. The NSCAI report is particularly valuable as it represents bipartisan consensus on U.S. AI strategy.

Key Takeaways: Long-term societal implications, recommended investments across compute infrastructure, talent development, and international cooperation; specific recommendations for DoD AI implementation.

Balakrishnan K., Technology Offsets in International Defence Procurement, Routledge pub., 2018.

Why Essential: A primary reference text on applied Offsets in Defence industrial development and procurement.

Key Course Tutors

Dr Kogila Balakrishnan (Senior Business Director and Lecturer)

Dr Robert Hercock (Chief Research Scientist & Visiting Fellow Oxford University)

Dr Robert Johnson (Senior Lecturer, Oxford University)

Lt. Col. (retired) Alan Brown (Fellow, Oxford University)

We also have a diverse pool of talent to provide the wider range of courses we can offer.