הטכניון
TECHNION
Israel Institute
of Technology
מכון טכנולוגי לישראל

Faculty of
Mechanical
Engineering
הפקולטה
להנדסת
מכונות

MECHANICAL ENGINEERING MSc SEMINAR (30 min.)

Thursday, March 19 2026 at 13:30-14:00, D. Dan and Betty Kahn Building, Room 217

What characterizes the endurance for war?
An info-gap response

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The progression of war is filled with surprises, misjudgments, and complex interactions. This deep uncertainty makes it difficult for traditional predictive models to capture the true dynamics of warfare, often rendering predictions highly unreliable and posing a critical challenge to studying the sustainability of war.

This study applies the robustness analysis paradigm to the domain of war endurance—defined here as the ability to deplete the enemy's forces and to sustain the war. We characterize the sustainability of warfare by whether a set of measurable performance requirements is met and explore the factors that may determine whether a party can meet these requirements. The core objective is not to find optimal solutions for specific contexts, but to demonstrate a methodology to manage the deep uncertainties that threaten war sustainability and to explore the robustness of strategic decisions. To this end, we utilize Info-gap Decision Theory (IGDT), to explore basic generic models and motivate general theoretical assertions.

The research models robustness across three critical dimensions of warfare: (1) casualties, (2) ammunition expenditure, and (3) joint mission success probability. We utilize generic IGDT models to quantify the trade-off between performance requirements and immunity to uncertainty. The findings suggest that striving for optimal performance often compromises system robustness. Conversely, this study enables the identification of satisficing strategies that ensure survival and endurance despite severe informational gaps. Ultimately, this research provides general assertions to support robust decision-making in the highly unpredictable environment of modern warfare.

Note: the seminar will be given in English

Seminars Coordinator: Assoc. Prof. Shmuel Gal.