Department of Mathematics and Statistics Colloquium

U.S. Army Strength Analysis and Forecasting Division - An introduction to analytical decision making within the U.S. Army Personnel Office

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Abstract: U.S. Army Operations Research / Systems Analysts (ORSA) assist decision makers in solving complex problems by producing the analysis and logical reasoning necessary to inform and underpin critical decisions. These individuals use analytic methods and mathematically based procedures bringing operational relevancy to studies, assessments, modeling and simulation, optimization, forecasting, and data science. The Army leverages these skills across diverse disciplines including personnel management, doctrine and force development, training management, equipment testing and acquisition, resource management, as well as tactical, operational and strategic planning throughout the highest levels of the Department of Defense. Within the U.S. Army Personnel Office (G-1), the Strength Analysis and Forecasting Division oversees the Army's human resource forecast of approximately 485,000 individuals that feeds into the Secretary of Defense and Presidential budget. The Division maintains a suite of manpower systems and predictive models to produce the forecast which is generated monthly to record and project the strength of the Army while considering accessions, retention, attrition, and promotions. These models consist of nearly 200,000 equations with an average runtime of ~12 hours. A full, 8-year, analysis exceeds the memory constrains of Windows Operating Systems.

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