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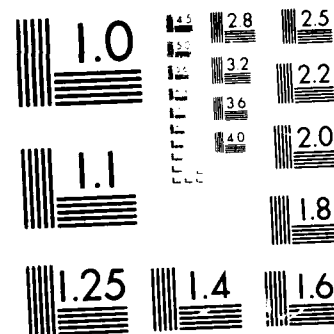
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Research was conducted in the fields of adaptive filtering and control, dynamic allocation and the multi-armed bandit problem, stochastic approximation, stochastic search, sequential analysis, and empirical Bayes methodology. In adaptive filtering and control, we developed asymptotically efficient simple recursive filters and control schemes for linear dynamic systems where certain parameters in the signal and noise models are unknown. In particular, asymptotic efficiency was achieved in adaptive control by resolving the apparent dilemma between information and control. To resolve this dilemma, considerable insight was provided by several recent breakthroughs in adaptive learning theory and the classical multi-armed bandit problem. We also worked on the development of adaptive learning algorithms and adaptive allo-			
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cation rules, and studied their applications to a variety of problems. Applications of the methodology of stochastic approximation to stochastic control and to stochastic optimization of constrained and unconstrained systems were also investigated. Motivated by applications to sampling inspection and quality control, we also developed a general theory of sequential analysis in the framework of dependent variables and composite hypotheses. In addition, empirical Bayes methods and semiparametric methods in estimation were studied, and stochastic search strategies for tracking mobile targets were developed.

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