

## Computer Science & Computer Engineering Courses

<b>CS 57100: Artificial Intelligence</b> <i>Department of Computer Science</i>	Purdue University – West Lafayette Graduate Course
<b>Content:</b> Search-based decision algorithms, probabilistic reasoning, game playing, decision making, exact and approximate inference, casual learning, Q-learning, robotic motion planning, and reinforcement learning. <b>Project:</b> Causal inference using Bayesian Graphical Models.	
<b>CS 57800: Statistical Machine Learning</b> <i>Department of Computer Science</i>	Purdue University – West Lafayette Graduate Course
<b>Content:</b> Classical supervised methods such as regression and classification, unsupervised learning methods such as principal component analysis and K-means clustering, Variational Bayes, expectation propagation, Gaussian processes. <b>Project:</b> Financial analysis and time-series forecasting using Autoregressive (AR), Moving Average (MA), Autoregressive Moving Average (ARMA), Autoregressive Integrated Moving Average (ARIMA), and Black-Scholes model for pricing options in financial markets.	
<b>ECE 59500: Introduction to Quantum Science &amp; Technology</b> <i>Department of Electrical &amp; Computer Engineering</i>	Purdue University – West Lafayette Graduate Course
<b>Content:</b> Quantum Mechanics, Hamiltonian and Schrodinger Equation, Wave Function and Probability, Tunneling, Dirac Notation, Density Operator, Spin Operators, Heisenberg Uncertainty, Wave Particle Duality, Coherence, Entanglement, Quantum EM Fields, Coherent States of Light, Polarization of Optical Fields, EM Resonators, Single Photon Detectors, E-Field Detection, Quantum Light, Second-Order Correlation Function, Strong Light-Atom Interactions, Trapping and Cooling Atoms, Three-Level Atoms, Rydberg Atoms, Trapped Ions, Fundamentals of Superconductors, Superconducting Two-Level Systems, Superconducting Qubit, Superconducting Circuits and Challenges, Light Interferometry, Particle Interferometry, Quantum Cryptography, Quantum Teleportation, Quantum Memory, Entanglement Distribution, DLCZ Protocol, Quantum Repeater, Quantum Computing, Deterministic Two-Qubit Logic Gates, Single and Two-Qubit Photonic Gates, Superconducting Gates, Quantum Logic Operation Using Trapped Ions. <b>Project:</b> Implementing Quantum Algorithms in Q#.	
<b>CS 53600: Data Communication &amp; Computer Networks</b> <i>Department of Computer Science</i>	Purdue University – West Lafayette Graduate Course
<b>Content:</b> Fundamentals of Data Transmission, Link Layer Technologies, Internetworking, Transport Layer Protocols, Congestion Control and Multimedia Streaming, TCP Congestion Control for Data Traffic, Intra- and Inter-domain Routing, Internet Traffic and Quality of Service, and Application Layer Protocols. <b>Project:</b> Implementing and analyzing congestion control algorithms such as TCP Reno, TCP Vegas, CUBIC-TCP, BIC-TCP, Hamilton TCP, Westwood, YeAH TCP, FAST TCP, TCP BBR, and Data Center TCP (DCTCP).	
<b>CS 69000: Deep Learning</b> <i>Department of Computer Science</i>	Purdue University – West Lafayette Graduate Course
<b>Content:</b> Mathematical Foundations of Deep Learning, Mathematical Foundations of Representation Learning, Stochastic Optimization of Neural Network Models, Backpropagation and Backpropagation-Through-Time, Feedforward Networks, Recurrent Networks, Transformers, Set – Representations, Convolutional Networks - Graph Neural Networks and Embeddings, Variational Auto-Encoders, Multi-task Learning, Transfer Learning, Meta Learning, Causal Mechanisms, Markov Chains and Sequence Learning, and Generative Adversarial Networks. <b>Project:</b> Designing and Implementing a Transformer Based Large Language Model (LLM).	
<b>CS 55100: Cloud Computing Fundamentals</b> <i>Department of Computer Science</i>	Purdue University – West Lafayette Graduate Course
<b>Content:</b> Cloud Data Centers and Infrastructure (Equipment for Processing, Storage, Communication, and Special-Purpose Facilities), Virtualized Servers (Virtual Machines and Containers), Virtualized Storage (Storage Area Networks, Network Attached Storage, Object Storage), and Virtual Networks, Automation, Orchestration Systems such as Kubernetes, Programming Paradigms, MapReduce, Microservices, Controller Based Computing, and Serverless Computing, Edge Computing, Security and Privacy in Cloud Systems, and Software Models. <b>Project:</b> Implementing, analyzing, and optimizing a cloud system to host consumer information for a large enterprise.	
<b>CS 59200: Motion Planning</b> <i>Department of Computer Science</i>	Purdue University – West Lafayette Graduate Course
<b>Content:</b> Crowd Simulation and Robotics, Configuration Space, Roadmap, Graph Search, Dijkstra's Algorithm, A* Search, Dynamic Pathfinding, Crowd Modeling and Simulation, Agent-based Modeling, Cellular Automata, Social Force Models, Multi-Agent Systems and Coordination, Decentralized Motion Planning, Coordination Algorithms, Swarm Intelligence, Sampling – based Motion Planning, Probabilistic Roadmap (PRM), Rapidly – exploring Random Trees (RRT), Optimization – based Motion Planning, Trajectory Optimization, Model Predictive Control, Reinforcement Learning, Robot Navigation in Complex Environments, Mapping and Localization, Sensor Fusion, Obstacle Detection and Avoidance, Human-Robot Interaction and Collaboration, and Machine Learning for Motion Planning. <b>Project:</b> Research project on multi-agent autonomous systems.	

<b>CS 441: Applied Machine Learning</b> <i>Department of Computer Science</i>	University of Illinois – Urbana Champaign Graduate Course
<b>Content:</b> K – Nearest Neighbors, Probability and Naïve Bayes, Linear Least Squares Regression, Logistic Regression, Ensembles and Random Forests, Support Vector Machines, Stochastic Gradient Descent, Multilayer – Perceptron, Backpropagation, Convolutional Neural Network, Transformer Architecture, CLIP and GPT-3 Models, Clustering, Expectation Maximization Algorithm, Latent Variable Model, Density Estimation, Principal Component Analysis, and Reinforcement Learning. <b>Project:</b> Using reinforcement learning for robotic motion.	
<b>CS 421: Programming Languages &amp; Compilers</b> <i>Department of Computer Science</i>	University of Illinois – Urbana Champaign Graduate Course
<b>Content:</b> Structure of Programming Languages and their Implementation, Programming Language Design Principles, Abstract Data Types, Functional Languages, Type Systems, Object Oriented Programming Languages, Lexical Analysis, Parsing, Syntax – detection Translation, Semantic Analysis, and Code Generation.	
<b>CS 411: Database Systems</b> <i>Department of Computer Science</i>	University of Illinois – Urbana Champaign Graduate Course
<b>Content:</b> Conceptual Data Modeling, Physical Data Modeling, Designing Schemas, Querying Databases (The Relational Way & The Non – relational way), Manipulating Databases, Accessing and Indexing Data, Query Processing, Query Optimizing, and Transaction Management. <b>Project:</b> Built and optimized a large – scale query mechanism for consumer facing webpages.	
<b>CS 374: Introduction to Algorithms and Models of Computation</b> <i>Department of Computer Science</i>	University of Illinois – Urbana Champaign Fundamental Course
<b>Content:</b> Recursion, Backtracking, Dynamic Programming, Greedy Algorithms, Basic Graph Algorithms, Depth First Search, Breadth First Search, Minimum Spanning Trees, Shortest Paths, All – Pairs Shortest Paths, Maximum Flows and Minimum Cuts, Applications of Flows and Cuts, NP – Hardness.	
<b>CS 357: Numerical Methods I</b> <i>Department of Computer Science</i>	University of Illinois – Urbana Champaign Fundamental Course
<b>Content:</b> Linear Algebra, Accuracy and Precision, Errors and Big-O Notation, Floating Point (IEEE 745 Standard), Taylor Series, Random Walk, Application of Norms, Linear Systems of Equations, Monte Carlo Methods, Vectors, Matrices and Norms, Linear System of Equations, LU Factorization, Conditioning, Eigenvalues, Structural Vibrations, Finite Difference Methods, Markov Chains, Google Page Rank, Hybrid Algorithms for Root Finding, Linear Regression using Optimization, Least – Squares Normal Equations, Singular Value Decomposition, Least Squares Singular Value Decomposition, 1D Optimization, ND Optimization, Topology Optimization, and Principal Component Analysis.	
<b>CS 241: System Programming</b> <i>Department of Computer Science</i>	University of Illinois – Urbana Champaign Fundamental Course
<b>Content:</b> Writing, compiling, and debugging C code programs, UNIX System call invocations from C programs, Memory Allocation and Memory Management, Processes in C programs, Threads in C programs, Concurrency, Semaphores, Mutexes, Synchronization Primitives, Debugging Deadlocks, UNIX Signals and Signal Handlers, Invoking and Catching Signals, I/O Devices, File Systems, Directories, Machine Memory Hierarchy, Caches, Virtual Memory, Protocols (such as TCP and IP), Interfaces (such as sockets), and Networking.	
<b>CS 233: Computer Architecture</b> <i>Department of Computer Science</i>	University of Illinois – Urbana Champaign Fundamental Course
<b>Content:</b> Digital Logic Design, Logic Gate Design, Computer Architecture, Machine Level Programming, Performance Models of Modern Computer Architectures, Software Optimization, and hardware Primitives for Parallelism and Security.	
<b>CS 225: Data Structures</b> <i>Department of Computer Science</i>	University of Illinois – Urbana Champaign Fundamental Course
<b>Content:</b> C++ Variables and Memory, Overloading and Inheritance, Lists Implementation and List Abstract Data Types, Circular Queue, Trees, Tree traversal, Binary Search Tree, Self-Balancing Binary Search Tree (AVL Tree), Heaps, Hashing, Disjoint Sets, Traversals, Minimum Spanning Trees, Single Source Shortest Path, All Pairs Shortest Path, Max Flow, Bloom Filter, and Counting and Cardinality.	
<b>CS 173: Discrete Structures</b> <i>Department of Computer Science</i>	University of Illinois – Urbana Champaign Fundamental Course
<b>Content:</b> Logic/Proofs, Number Theory, Sets, Relations, Functions, Graphs, Two Way Bounding and Proofs, Induction, Trees, Recursion Trees, Grammar Trees, Big-O Notation, Algorithms, Nondeterministic Polynomial Time Proofs, Collections of Sets, Contradiction, State Diagrams, and Countability.	
<b>Certificate: Machine Learning</b> <i>Department of Computer Science</i>	Stanford University Online Course
<b>Content:</b> Supervised: classification and regression, logistic regression, Bayes classifier, Support Vector Machine, Neural Network; Unsupervised: K-Means clustering, Principal Component Analysis (PCA). Taught by Professor Andrew Ng.	

## Statistics Courses

<b>STAT 448: Advanced Data Analysis</b> <i>Department of Statistics</i>	University of Illinois – Urbana Champaign Graduate Course
<b>Content:</b> Inference for Categorical Data, Analysis of Variance, Linear Regression, Logistic Regression, Generalized Linear Models, Text Analysis, Discriminant Function Analysis, Classification Trees, Cluster Analysis, Principal Component Analysis, and Correspondence Analysis. <b>Project:</b> Statistical analysis in Statistical Analysis Software (SAS) and presentation of findings.	
<b>STAT 433: Stochastic Processes</b> <i>Department of Statistics</i>	University of Illinois – Urbana Champaign Graduate Course
<b>Content:</b> Discrete – time and Continuous – time Markov Chains, Birth and Death Chains, Branching Chains, Stationary Distributions, Random Walks, Markov Pure Jump Process, Birth and Death Processes, Poisson Processes, Renewal Processes, Queues, Second Order Processes, Brownian Motion (Weiner Process), and Ito's Lemma.	
<b>STAT 432: Basics of Statistical Learning</b> <i>Department of Statistics</i>	University of Illinois – Urbana Champaign Graduate Course
<b>Content:</b> Linear Regression, Nonparametric regression, Binary and Multiclass Classification, Generative Models, Resampling, Regularization, Ensemble Methods, Applied Machine Learning. <b>Project:</b> Analysis in R for a research paper.	
<b>STAT 428: Statistical Computing</b> <i>Department of Statistics</i>	University of Illinois – Urbana Champaign Graduate Course
<b>Content:</b> R and Data Structures, R Markdown, Indexing and Iteration, Data Frame and Vectorization, Functional and Objective Design, Testing and Debugging, Plotting, Random Variable generation, Monte Carlo Integration, Simulation, Bootstrap and Jackknife, Permutation Test, Markov Chain Monte Carlo, Tidyverse, and R Package Development.	
<b>STAT 426: Statistical Modelling II</b> <i>Department of Statistics</i>	University of Illinois – Urbana Champaign Graduate Course
<b>Content:</b> Logistic Regression, Generalized Linear Models, Goodness of Fit, Link Functions, Count Regression, Log Linear Models, Probability for Contingency Tables, and Ordinal Response Models.	
<b>STAT 425: Applied Regression and Design</b> <i>Department of Statistics</i>	University of Illinois – Urbana Champaign Graduate Course
<b>Content:</b> Simple Linear Regression, Multiple Linear Regression, Analysis of Covariance, Diagnostics, Generalized Least Squares, Collinearity, Polynomial Regression, Nonparametric Regression and Spline Models, One – way and Two – way ANOVA, Blocking Designs and higher Order ANOVA, Variable Selection, Tree Models, and Logistic Regression.	
<b>STAT 410: Statistics &amp; Probability II</b> <i>Department of Statistics</i>	University of Illinois – Urbana Champaign Graduate Course
<b>Content:</b> Functions of a Random Variable, Mixed Random Variables, Joint Distributions, Independence and Covariance, Conditional Distributions, Convolution, Transformation of Several Random Variables, Bivariate Normal Distributions, Multivariate Normal Distributions, Gamma Distribution, Estimation, Convergence in probability, Convergence in Distribution, Central Limit Theorem and Delta Method, Sufficient Statistics, Rao-Cramer Lower Bound, Hypothesis Testing, and Likelihood Ratio Test.	
<b>STAT 400: Statistics &amp; Probability I</b> <i>Department of Statistics</i>	University of Illinois – Urbana Champaign Graduate Course
<b>Content:</b> Properties of Probability, Conditional Probability, Bayes' Theorem, Independent Events, Methods of Enumeration, Discrete and Continuous Random Variables (Expectation, Mean, Variance), Binomial Distribution, Geometric and Negative Binomial Distribution, Hypergeometric and Multinomial Distribution, Poisson Distribution, Moment Generating Functions, Normal Distribution, Chebyshev's Inequality, Uniform and Exponential Distributions, Gamma Distribution, Joint Probability Distributions, Independent Random Variables, Covariance and Correlation, Central Limit Theorem, Normal Approximation to Discrete Distributions, maximum Likelihood, Method of Moments, Estimators, Confidence Intervals for means, Sample Size Planning, Student's t Distribution, Confidence Intervals for Variance, Confidence Intervals for Proportions, and Hypothesis Tests.	
<b>STAT 385: Statistical Programming Methods</b> <i>Department of Statistics</i>	University of Illinois – Urbana Champaign Graduate Course
<b>Content:</b> Objects and Functions, Atomic Vectors, Vectors and Subsetting, Logic and Control Flow, Object Oriented Programming, Data Transformation, Shiny Applications.	
<b>STAT 200: Statistical Analysis</b> <i>Department of Statistics</i>	University of Illinois – Urbana Champaign Fundamental Course
<b>Content:</b> Observational Studies, Randomized Experiments, Confounding Variables, Descriptive Statistics (Mean, Median, Standard Deviation, Histograms, Box Plots, Normal Curve, etc.), Probability Multiplication Rule, Probability Addition Rule, Conditional Probability, Bayes Theorem, Expected Value, Convergence to Normal Curve, Sampling, One Sample and Two	

Sample Z Tests, Chi Square tests for Goodness of Fit and Independence, Type I and Type II Errors and the Power of Significance Tests, Correlation Coefficient, Regression Equation in Simple Linear Regression, Inference for Simple Linear Regression, Multiple Regression, F Tests for Overall Regression and T Test for slopes, ANOVA, Transformation of Variables, Logistic Regression, and Non – parametric Statistics.

### Mathematics Courses

<b>MATH 441: Differential Equations</b> <i>Department of Mathematics</i>	University of Illinois – Urbana Champaign Graduate Course
<b>Content:</b> Models and Classification of Differential Equations, First Order Linear and Separable Differential Equations, Statement of Existence and Uniqueness Theorems, Proof of Existence and Uniqueness, Autonomous Equations and Population Dynamics, Reduction of 2 <sup>nd</sup> Order, Euler’s Method, Second Order Linear Differential Equations, Mechanical Oscillators and Resonance, Higher Order Linear Differential Equations, Series Solutions near an Ordinary Point, Regular Singular Point, Systems of Differential Equations, Phase Portraits, Linear Homogeneous Systems (Real and Complex Eigenvalues), Matrix Exponentials, Putzer’s Algorithm, Linearization of Autonomous Systems, Polar Coordinates and Limit Cycles, Energy Conservation/dissipation, Damped Pendulum Phase Portrait, and Lorenz System and Chaos.	
<b>MATH 415: Applied Linear Algebra</b> <i>Department of Mathematics</i>	University of Illinois – Urbana Champaign Graduate Course
<b>Content:</b> Vector Operations and Dot Product, Hanging and Aligning Curves in 2D and 3D Space, Cross Product, Identity and Stretching Matrices, Matrix Rotations and Operations, Positive Definite, Reflection, Inverse and Transpose Matrices, Inverting 2D Matrices, Rank of a Matrix and Properties of the Determinant, Cramer’s Rule, Finding Rank, Determinants and Rotations of 3D Matrices, Gaussian Elimination and Reduced Row Echelon Form, Principal Component Data Analysis via SVD, Creative Rounding of Matrices and Image Compression, Subspaces and Spans, Linear Independence and Dimension, Orthonormal Bases, Diagonalization of a Matrix, Properties of Eigenvalues and Eigenvectors, Dynamical Systems, Applications of Spectral Theorem, Gradient Vectors, Orthogonal Sets of Functions, Fourier Approximations, and The Gram-Schmidt Process.	
<b>MATH 241: Calculus III</b> <i>Department of Mathematics</i>	University of Illinois – Urbana Champaign Fundamental Course
<b>Content:</b> Three Dimensional Coordinate Systems, Vectors, The Dot Product, The Cross Product, Equations of Lines and Planes Cylinders and Quadratic Surfaces, Vector Functions and Space Curves, Derivatives and Integrals of Vector Functions, Arc Length and Curvature, Motion in Space (Velocity and Acceleration), Functions of Several Variables, Limits and Continuity, Partial Derivatives, Tangent Planes and Linear Approximation, The Chain Rule, Directional Derivatives and gradient Vector, Maximum and Minimum Values, Lagrange multiplier, Double Integrals, Iterated Integrals, Triple Integrals, Change of Variables in Multiple Integrals, Vector Fields, Line Integrals, The Fundamental Theorem of Line Integrals, green’s Theorem, Curl and Divergence, Parametric Surface and Their Areas, Surface Integrals, Stokes’ Theorem, and The Divergence Theorem.	
<b>MATH 231: Calculus II</b> <i>Department of Mathematics</i>	University of Illinois – Urbana Champaign Fundamental Course
<b>Content:</b> Integration by Parts, Trigonometric Integrals, Trigonometric Substitution, Integration of Rational Functions by Partial Fractions, Approximate Integration, Improper Integrals, Sequences, Series, Integral Tests and Estimates of Sums, The Comparison Tests, Alternating Series, Absolute Convergence and the Ratio and Root Tests, Strategy for Testing Series, Power Series, Representation of Functions by Power Series, Taylor and Maclaurin Series, Calculus with Parametric Curves, Polar Coordinates, and Areas and Lengths in Polar Coordinates.	

### Economics Courses

<b>ECON 471: Introduction to Applied Econometrics</b> <i>Department of Economics</i>	University of Illinois – Urbana Champaign Graduate Course
<b>Content:</b> Bivariate Regression, Bivariate Regression Inference, Multiple Regression, Inference and Model Selection, Time Series, Dynamic Models, Causal Models and Endogeneity, Binary Response Models, Quantile Regression, Duration Model, and Non-parametric Regression. <b>Project:</b> Statistical analysis of empirical data.	
<b>ECON 437: Game Theory</b> <i>Department of Economics</i>	University of Illinois – Urbana Champaign Graduate Course
<b>Content:</b> Normal Form Games, Iterated Elimination of Strictly Dominated Strategies, Nash Equilibrium, Cournot Game, Bertrand Game, Mixed Strategies, Dynamic Games, Backwards Induction, Stackelberg Model, Sequential Bargaining, Two – Stage Games of Complete but Imperfect Information, Finitely Repeated Games, Infinitely Repeated Games, Dynamic Games of Complete but Imperfect Information, Subgame – Perfect Nash Equilibrium, Normal Form Representation of Static Bayesian Games, and Bayesian Nash Equilibrium.	

<b>ECON 425: Macroeconomic Policy</b> <i>Department of Economics</i>	University of Illinois – Urbana Champaign Graduate Course
<b>Content:</b> Aggregate Demand and Supply, The Real Interest Rates and the Macroeconomic Equilibrium, Monetary Policy and Aggregate Demand, IS Curve and LM Curve, Log – Linear IS Curve, Labor Market Equilibrium, Equilibrium with Nominal Price Rigidities, Empirical Evaluation of the AS Curve, and Alternative Formulations of the AS Curve.	
<b>ECON 302: Intermediate Microeconomic Theory</b> <i>Department of Economics</i>	University of Illinois – Urbana Champaign Fundamental Course
<b>Content:</b> Demand and Supply Functions, Competitive Equilibrium, Comparative Statics, Elasticity of Demand and Supply, Consumer Preferences, Consumer Constraints, Consumer Choice, Individual Demands, Market Demand, Production, Cost, Long Run and Short Run Costs, Profit Maximization, Short Run Supply Curve Long Run Supply Curve, Efficiency and Price Ceiling, Price Floors, Monopoly, Cartels, Monopsony, Pricing Policies Anti-trust Regulation.	
<b>ECON 203: Economic Statistics II</b> <i>Department of Economics</i>	University of Illinois – Urbana Champaign Fundamental Course
<b>Content:</b> Inference, Hypothesis Testing, Confidence Interval, Two Population Difference in means, Population Variance, Two Population Means (Matched Pairs), Two Population Ratio of Variances, One Way ANOVA, Simple Linear Regression, Significance Tests, Confidence and Prediction Intervals, Multiple Regression, Modelling Process, Adjusted $R^2$ , Partial and Overall F Tests, Coefficient t test, Curvilinear Relationships, Dummy Variables, Time Series, Components, Moving Averages, Exponential Smoothing, Trends and Cyclical Effects, Seasonal Effects, and Forecasting.	
<b>ECON 102: Microeconomic Principles</b> <i>Department of Economics</i>	University of Illinois – Urbana Champaign Fundamental Course
<b>Content:</b> Supply and Demand Curves, Market Efficiency and Government Policies, Elasticities, Production and Costs, Competitive Output, Firms with Market Power, public Goods, and Common Resources and Externalities.	

### **Business Administration & Finance Courses**

<b>FIN 221: Corporate Finance</b> <i>Department of Business Administration</i>	University of Illinois – Urbana Champaign Fundamental Course
<b>Content:</b> Financial Statements, Analysis of Financial Statements, Risk and Rates of Return, Time Value of Money, Bonds and their Valuation, Stocks and their Valuation, Cost of Capital, Cash Flow Estimation, Risk Analysis, Capital Structure and Dividend, Dividend Policy, Financial Forecasting, and Financing Current Assets.	
<b>ACCY 200: Fundamentals of Accounting</b> <i>Department of Business Administration</i>	University of Illinois – Urbana Champaign Fundamental Course
<b>Content:</b> Financial Statements and Accounting Concepts/Principles, Financial Statements, Bookkeeping Process and Transaction Analysis, Accounting for and Presentation of Current Assets, Accounting for and Presentation of Noncurrent Assets, Accounting and Presentation of Liabilities, Accounting and Presentation of Stockholders' Equity, Income Statement and the Statement of Cash Flows, Financial Statement Analysis, Managerial Accounting and Cost – Volume – Profit Relationships, Cost Accounting and Reporting, and Costs for Decision Making.	
<b>Certificate: Financial Markets</b> <i>Department of Business Administration</i>	Yale University Online Course
<b>Content:</b> Basics: securities, insurance, and CAPM; behavioral finance: forecasting, pricing, and inflation; Risk Management: debt theory, efficient markets, and corporate stocks; Financial Institutions: banks, investment banks, and exchanges; Public and Non-profit Finance: real estate, monetary policy, and environmental finance. Taught by Professor Robert J. Shiller.	