**password:** machinelearning

**List of ML SMU final topics:**

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| **Name:** | **Topic** | **Link** |
| D. Byrne | Links between Signal Processing and Machine Learning | [link](https://vimeo.com/354258625) |
| S.Gozdzialski | Multi-arm Bandit | [link](https://vimeo.com/329712885), [ref](https://vimeo.com/330642307) |
| K. Mendonsa | Topic: Recurrent Neural Network and LSTMs | [Link:](https://vimeo.com/354002241) |
| S. Cocke | Gini impurity vs Entropy in Random Forest Classifier | [link](https://vimeo.com/354288297) |
| J.Villanueva | Quantifying Influential Observations and its Effects on ML A | [link](https://vimeo.com/354547801) |
| D. Serna | Hebbian Learning Model and Alternatives | [link](https://zoom.us/recording/play/GEpSank7MuTCm9nwrPOsgoen_muhqe6UWmOpA0F8Ni_DbgZkkX2zcCXsNrA0nH1Z) |
| S. Loftin | Saliency Maps in CNN | [link](https://vimeo.com/user46009861/download/353466047/58e0e1c56d) |
| P. Leon | Machine Learning Platforms | [link](https://vimeo.com/353861670) |
| P. Flaming | Model Optimization with Monte Carlo methods in Kernel Conditional Density Estimates for Regression Tasks. | [link](https://vimeo.com/354094513), [ref](https://arxiv.org/pdf/1206.5278.pdf) |
| C. Graves | Homomorphic Encryption for Machine Learning | [link](https://vimeo.com/353928524) |
| Q.Nixon | Overview of Gaussian Processes | [link](https://vimeo.com/353949038) |
| D.Stroud | Kernel Methods | [link](https://vimeo.com/354119216) |
| Y. S. Kunwar | Prediction Intervals for Random Forests | [link](https://vimeo.com/353900241) |
| S. Chew | XGBoost Algorithm | [link](https://vimeo.com/354197085) |
| J. Lancon | Boosting, Bagging, and Stacking (Ensemble methods) | [link](https://vimeo.com/354059951) |
| V. Viswanathan | Stochastic Gradient Descent for Machine Learning | [link](https://vimeo.com/353454651) |
| S. Samuel | End-To-End ML Pipeline with Fairness Policies | [link](https://vimeo.com/354077490) |
| A. Mohan | PCA | [link](https://vimeo.com/353894048) |
| A. Subramanian | CycleGAN | [link](https://vimeo.com/353483822/) |
| M. Ahluwalia | Neural network and back propagation | [link](https://vimeo.com/353832348) |
| I. Bakhtiar | Balanced and Imbalanced Datasets, handling techniques imbalanced data | [link](https://vimeo.com/354139017) |
| V. Briker | t-SNE, t-SNE vs PCA | [link](https://vimeo.com/353941335) |
| M. Kuklani | KNN and the Importance of Distance Metrics in Machine Learning Modelling | [link](https://vimeo.com/353629475) |
| M. Hightower | Word2Vec | [link](https://vimeo.com/353156338) |
| B. Houssaye | Feature Selection | [link](https://vimeo.com/354134978) |
| A. Veluchamy | Sentiment Analysis using Deep Learning | [link](https://vimeo.com/329937534) |
| S. Milett | Image denoising using Autoencoders (password test) | [link](https://vimeo.com/328877135) |
| N. Wall | Gradient Weighted Class Activation Mapping | [link](https://vimeo.com/331118286) |
| K. Thomas | Support Vector Data Description (SVDD) | [link](https://vimeo.com/327587455), [ref](https://vimeo.com/330565199) |
| C. Martinez | Time Series Classification | [link](https://vimeo.com/331204137) |
| S. Gu | High Dimensional Data Visualization Using t-SNE | [link](https://vimeo.com/331798056) |
| K. Dickens | SVM Kernel | [link](https://vimeo.com/329844779) |
| J. Heinen | Topic Modeling: LDA (Latent Derilicht Analysis) vs. NMF (Non-negative Matrix factorization) | [link](https://vimeo.com/317839315) |
| K. Okiah | How is Gini impurity used in Random Forest Classifier? | [link](https://vimeo.com/329503128) |
| M. Palanisamy | Reinforcement Learning | [link](https://vimeo.com/332024768) |
| N. Brown | Distributed Representations | [link](https://vimeo.com/326181155) |
| L. Sterling | Self Organizing Maps | [link](https://vimeo.com/329730066) |
| A. Siddiqui | Bayesian optimization | [link](https://vimeo.com/330642527) |
| D. Davieau | Why computations in Deep Learning work better on GPU's. Explain what a deep learning algorithm is doing on a 4/8 core CPU and why a GPU of about the same cost can do it much faster. | [link](https://vimeo.com/327587530) |
| C. Morgan | An introduction to how Recurrent Neural Networks work | [link](https://vimeo.com/330697129) |
| L. Cheng | Hidden Markov model( password hmm) | [link](https://vimeo.com/330876581) |
| B. Yu | Introduction of Boosting Algorithm | [link](https://vimeo.com/330406383) |
| E. Carrera | Connection between gradient descent and gradient boosting | [link](https://vimeo.com/329768724) |
| M. Toolin | Bayesian Networks | [link](https://vimeo.com/331672440) |
| M. Rega | Boosted Logistic Regression Models | [link](https://vimeo.com/329447110) |
| J. Lingle | RELU overview | [link](https://vimeo.com/331603307) |
| B. Kimbark | Unsupervised Learning in Cybersecurity | [link](https://vimeo.com/331712676) |
| R. Bss | use of backward propagation algorithm in NN | [link](https://vimeo.com/330342948) |
| R. Simhambhatla | : Transfer Learning in machine learning. | [link](https://vimeo.com/330241358) |
| J. Kassof | Random Subspace Method/Feature Bagging | [link](https://vimeo.com/331728556) |
| T. Prasad | Convolutional Neural Networks (CNN) Algorithm | [link](https://vimeo.com/330377126), [ref](https://vimeo.com/330687182) |
| N. Rezsonya | Introduction of ensemble methods-- Bagging (password thanksverycool) | [link](https://vimeo.com/330362842) |
| M. Shubbar | **ARIMA - A Mathematical Progression** | [link](https://vimeo.com/330956683) |
| G. Lane | Graph stores and how they work | [link](https://vimeo.com/332563569) |
| M. Luzardo | Semi-supervised learning applied to multi-target regression | [link](https://vimeo.com/331900000) |
| A. Nelson | Neural Network Optimization Functions | [link](https://vimeo.com/331130784) |
| B. Benefield | SVM: What makes rbf a better default choice than poly kernel | [link](https://vimeo.com/332309994) |
| J. Flores | TF-IDF & Cosine Similarity Optimization for Large Datasets / NLP use case | [link](https://vimeo.com/329257739) |
| A. Schams | The APV-MCTS algorithm used by AlphaGo | [link](https://vimeo.com/330563430) |
| J. Knowles | 3rd Wave AI - Contextual Reasoning in natural language processing | [link](https://vimeo.com/332116908) |
| A. Shen | Multinomial Logistic Regression | [link](https://vimeo.com/329731011) |
| M. Shahini | Understanding the Bellman Equation | [link](https://vimeo.com/332588264) |
| J. Lubich | How Automatic Hyperparameter Tuning Works in AWS Sagemaker | [link](https://vimeo.com/329469215) |
| M. Pednekar | object detection,classification, image processing | [link](https://vimeo.com/331488438) |
| R. Nagarajan | Time Series Forecasting Using Artificial Neural Networks | [link](https://vimeo.com/331749207) |
| M. Shulyk | Understanding Dropout Regularization stage as overfitting is a big concern when using CNN for image recognition | [link](https://vimeo.com/332124958) |
| J. Lin | Looking into different algorithms for Panel Data, but mainly looking at CNN. | [link](https://vimeo.com/330554084) |
| J. Marin | Association Rules/Market Basket Analysis | [link](https://vimeo.com/330362722) |
| S. Fite | SVM Math principles and how its used human trafficking (more focus on the math, just tying it back to some HT applications and data). | [link](https://vimeo.com/330144325) |
| V. Ahir | Impact of Limited Numerical Precision on neural network training | [**link**](https://vimeo.com/328984545) |
| A. Saxena | Dropout vs Regularization in neural network | [link](https://vimeo.com/330627422) |
| R. Talk | Pooling in Convolutional Neural Network | [link](https://vimeo.com/331347019) |
| T. Deason | Markov chains and use in Monte Carlo Simulation | [link](https://vimeo.com/330089338) |
| C. Kim | Mini-Batch Gradient Descent | [link](https://vimeo.com/332599158) |
| T. Pompo | Attention Based Neural Networks and the Transformer | [link](https://vimeo.com/331154806) |
| L. Dajani | CNN Optimizers with a focus on adam on simple facial image recognition. | [link](https://youtu.be/sQtjWMpAmCE) |
| D. Geislinger | Learn about Capsule Networks and how they can be useful for image classification | [link](https://vimeo.com/331923943) |
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