About Me

- Website: [http://thepythiccoder.com](http://thepythiccoder.com)
- Twitter: @pythiccoder
- Github: aribornstein
Part 1: Experimentation
Signal and Noise

The illustrations are from an article on cameras that can be found [Cambridge In Colour](https://www.cambridgeincolour.com).
Signal and Noise

http://www.criticalcommons.org/Members/ccManager/clips/alphabet-soup-is-used-as-an-interface-for-the-bat
What does this look like?
350,000,000
The amount of new data is overwhelming
For the average doctor.
Medical Research Types

Basic
Clinical
Translational
Classifying Genetic literature
Document Classification Process

- Data Aggregation
- Normalization
- Feature Selection
- Model Selection
- Benchmarking & Optimization
Document Classification Process

Data Aggregation → Normalization → Feature Selection → Model Selection → Benchmarking & Optimization
Document Classification Process

- Data Aggregation
- Normalization
- Feature Selection
- Model Selection
- Benchmarking & Optimization
Document Classification Process

1. Data Aggregation
2. Normalization
3. Feature Selection
4. Model Selection
5. Benchmarking & Optimization
Document Classification Process

1. Data Aggregation
2. Normalization
3. Feature Selection
4. Model Selection
5. Benchmarking & Optimization
Document Classification Process

1. Data Aggregation
2. Normalization
3. Feature Selection
4. Model Selection
5. Benchmarking & Optimization
Azure ML

Data

Blobs and Tables
Hadoop (HDInsight)
Relational DB (Azure SQL DB)

Integrated development environment for Machine Learning

Clients

Model is now a web service that is callable

Monetize the API through our marketplace

Monetize the API through our marketplace
Using Experiments to Augment and Operationalize my code
Azure ML Workbook Demo
Part 2: Production
Great so now I have a SciKit Learn model how can we push it to production?
Production Process today
Pushing my code to production in python with Azure ML

```python
@services.publish('workspace_id', 'workspace_token')
@services.types(abstract = str)
@services.results(list)
def classify(abstract):
    return clf.predict(abstract)
```
That’s easy but what’s in it for me?

• Scalable Restful and Swagger Endpoints
• Auto generated documentation
• Sample Code and Excel integration
• Monetization through the azure marketplace
Azure ML Studio Demo
Recap

- Pandas and SciKit learn provide valuable tools for building machine learning solutions
Recap

• Pandas and SciKit learn provide valuable tools for building machine learning solutions

• Azure ML provides mechanisms to augment these tools and operationalize your code
Questions
Resources

• MVA Getting Started with Microsoft Azure Machine Learning
• Azure Machine Learning (FAQ) Types
• Blog: TechNet Machine Learning Blog
• Module Descriptions: Machine Learning Module Descriptions
• Project Bethesda: Research Classification Model
Using Azure ML as a Workbook Service
Using Experiments to Augment and Operationalize my code

- Attach Python Scripts to workflow
- Import Custom Dependencies
- Visualize