

Comece com ML hoje

CHARLES BAUER

Links úteis

Diagrama de uso do Azure ML Studio:

<https://docs.microsoft.com/pt-br/azure/machine-learning/machine-learning-studio-overview-diagram>

Livro com passo a passo para começar a usar o Azure ML Studio:

https://blogs.msdn.microsoft.com/microsoft_press/2015/04/15/free-ebook-microsoft-azure-essentials-azure-machine-learning/

Que tipo de Perguntas ML Responde?

O que houve? Quem são? Quantos são? (Análise Descritiva)

- Quem são meus clientes?
- Quantos tipos de clientes temos?

Por que tal coisa está acontecendo? (Análise Diagnóstica)

- Por que estamos perdendo clientes todos os meses?
- Por que o número de ligações está aumentando?

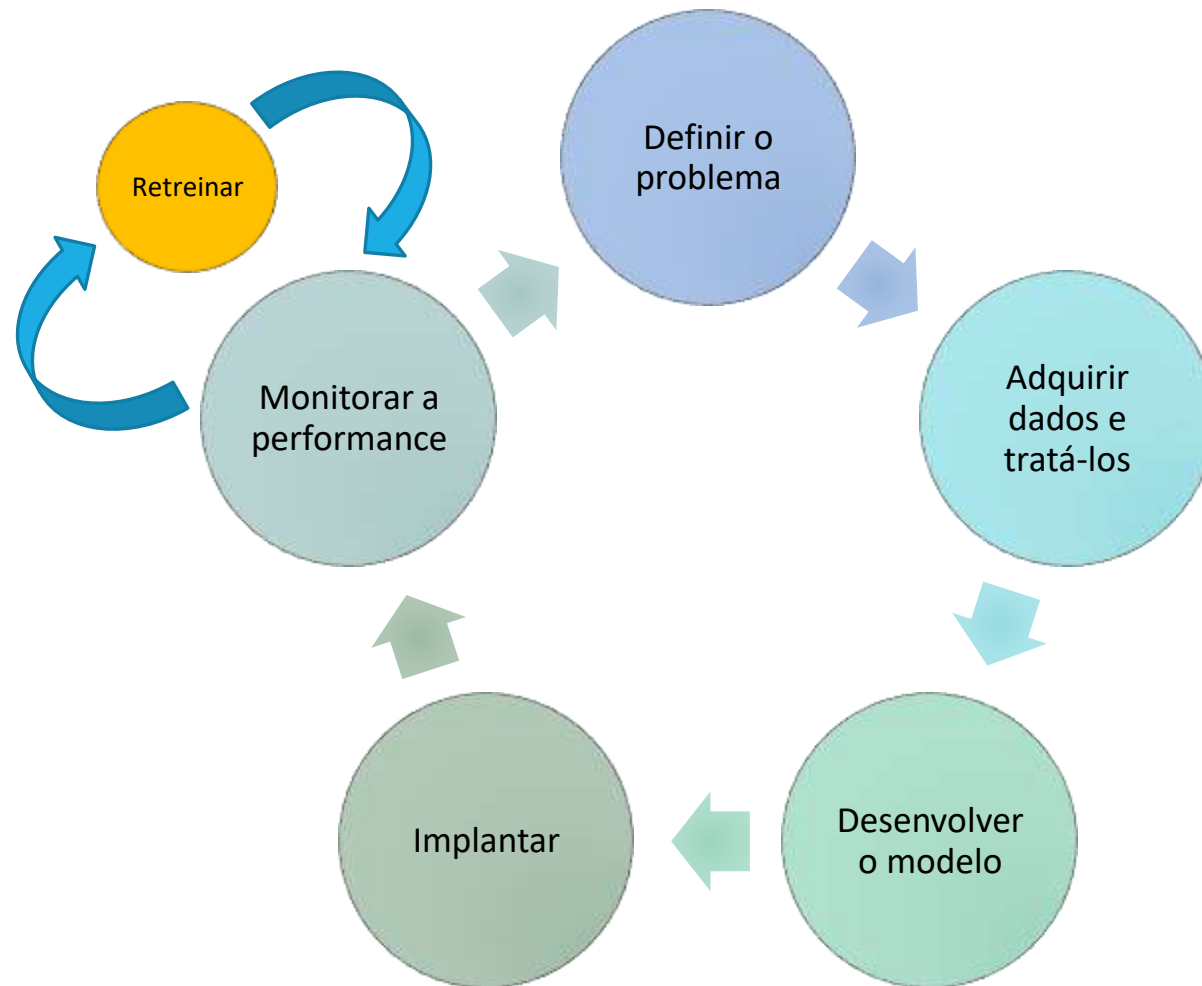
O que vai acontecer? (Análise Preditiva)

- Quais clientes vão comprar nosso produto Premium?
- Quais clientes vão nos deixar?

O que podemos fazer no futuro? (Análise Prescritiva)

- Que serviços devemos oferecer para tais clientes?
- Quantas pessoas devemos colocar para atender as ligações no natal?

Como fazemos isso?



Que técnicas utilizamos?

Classificação de dados

- Ex.: Classificar uma oportunidade dentro das áreas da empresa com base em anotações do CRM;
- Dizer se o cliente vai cancelar ou não um contrato.

Clusterização

- Ex.: Agrupar clientes por similaridade;
- Agrupar documentos semelhantes.

Regressão

- Ex.: Dizer quanto devemos cobrar por um projeto;
- Dizer em que temperatura provavelmente o sistema irá parar.

Análise de Conteúdo

- Ex.: Dizer quais comentários no Twitter são negativos;
- Identificar rostos em fotos.

Recomendação

- Ex.: Dizer que produtos ou serviços devemos oferecer para determinado cliente;
- Identificar que produtos que normalmente são vendidos em conjunto.

Com utilizar tudo isso no dia-a-dia?

API's e bibliotecas para integração em seus sistemas atuais ou novos;

Consultas via Tabelas do Excel;

Entrega de relatórios pontuais.

Exemplo prático

Prever a renda anual de uma pessoa

Problema:

- Com base em dados históricos prever a renda anual de uma determinada pessoa.

Obter e Tratar dados:

- Dados do senso Demográfico Americano de 1994-1995;
- Obter dados do senso disponibilizados pela UCI (<https://archive.ics.uci.edu/ml/datasets/Adult>);
- Remover colunas que não nos ajudam na análise;
- Remover linhas que contém dados faltando pois também atrapalham o algoritmo escolhido;

Desenvolver o modelo:

- Escolhemos um algoritmo binário para termos apenas duas respostas ($\leq 50k$ ou $> 50k$);

Implantamos o modelo:

- Utilização via Excel;
- Utilização via programa em Python;

Monitoramos a performance/assertividade do modelo:

- Utilizamos gráficos e técnicas de avaliação do modelo.

Onde faremos isso?

Precisamos de poder computacional:

- Para treinar o modelo;
- Ter escalabilidade;

Queremos começar hoje:

- Não queremos ficar instalando pacotes, compilando, parametrizando, lendo sobre algoritmos...

Escolha:

- Cloud Computing: Microsoft Azure.
- Opção Gratuita.

ML Studio - <https://studio.azureml.net>

The screenshot shows the Microsoft Azure Machine Learning Studio interface. At the top, the browser address bar displays <https://studio.azureml.net/>. The page header includes the "Microsoft Azure Machine Learning Studio" title and a user profile for "Charles Bauer-Free-Works...".

The main content area features a banner for "Introducing: Competitions" with a flask and trophy icon, and a "Learn More" link. Below this is the "Experiment Gallery" with three featured experiments:

- Binary Classification: Twitter sentiment analy...**
This experiment demonstrates the use of the Execute R Script, Feature Selection, Feature Hashing module...
Two-Class Support Vector Machine
Classification Text Mining
- Recommender: Restaurant ratings**
This experiment demonstrates the use of the Matchbox recommender modules to train a restaurant reco...
Recommender Restaurants
- Regression: Demand estimation**
This experiment demonstrates demand estimation using regression with UCI bike rental data.
Boosted Decision Tree Regression
demand estimation

To the right of the gallery, a "Welcome back charles!" message is displayed, followed by sections for "MY RECENT WORKSPACES:" (listing "Charles Bauer-Free-Workspace") and "MY RECENT EXPERIMENTS:" (listing three experiments created on 06/11/2016). A "my experiments" link is provided below.

The footer section contains "Webinars NEW!" with three featured webinars:

- Decoding Brain Signals**
Aired on August 02, 2016
Patients who have injuries or tumors on the neuron connectivity have difficulties in connecting the visual stimulus and cognition.
- Inside the Data Science VM**
Aired on June 21, 2016
DSVM is a custom Azure Virtual Machine image that is published on the Azure marketplace and available on both Windows and Linux. It
- Predictive Maintenance Modeling**
Aired on July 05, 2016
Predictive maintenance is one of the top demanded applications of predictive modelling and is seen as a life-saver in asset-heavy

The bottom right corner shows a zoom level of 75%.

ML Studio

https://studio.azureml.net/Home/ViewWorkspaceC

Experiments - Microsoft Az...

FileEditViewFavoritesToolsHelp

Microsoft Azure Machine Learning Studio

Charles Bauer-Free-Works...

PROJECTS

EXPERIMENTS

WEB SERVICES

NOTEBOOKS

DATASETS

TRAINED MODELS

SETTINGS

experiments

MY EXPERIMENTS SAMPLES

		NAME	AUTHOR	STATUS	LAST EDITED
<input type="checkbox"/>		Demonstração Meetup - webservice [Predictive Ex...	charles	Finished	11/5/2016 5:18
<input type="checkbox"/>		Demonstração Meetup - webservice	charles	Finished	11/5/2016 5:04
<input type="checkbox"/>		Demonstração Meetup	charles	Draft	11/5/2016 11:3
<input type="checkbox"/>		Analise areas dinamio - WebService	charles	Draft	10/20/2016 10:
<input type="checkbox"/>		Analise areas dinamio - WebService [Predictive Ex...	charles	Finished	4/17/2016 7:05
<input type="checkbox"/>		Analise areas dinamio	charles	Draft	4/17/2016 6:44
<input type="checkbox"/>		Usando módulos R	charles	Failed	4/5/2016 11:20
<input type="checkbox"/>		Create R Model - Copy	charles	Draft	4/4/2016 11:58
<input type="checkbox"/>		Tutorial Competition: Iris Multiclass Classification	charles	Draft	4/2/2016 11:01
<input type="checkbox"/>		Tutorial Competition: Iris Multiclass Classification...	charles	Finished	4/1/2016 8:12:3
<input type="checkbox"/>		Experiment created on 23/03/2016	charles	Finished	3/25/2016 9:00
<input type="checkbox"/>		Text Classification: Step 2 of 5, text preprocessing	Microsoft	Draft	3/24/2016 5:56
<input type="checkbox"/>		Text Classification: Step 4 of 5, train and evaluate...	Microsoft	Canceled	3/23/2016 11:2

0 items selected

+ NEW

DELETE

ADD TO PROJECT

100%

ML Studio: Novo experimento

The screenshot displays the Microsoft Azure Machine Learning Studio web interface. The browser address bar shows the URL <https://studio.azureml.net/Home/ViewWorkspaceC>. The page title is "Microsoft Azure Machine Learning Studio". The user is logged in as "Charles Bauer-Free-Works...".

The interface is divided into several sections:

- Left Sidebar:** Contains navigation icons and labels for "PROJECTS", "NEW", "DATASET", "MODULE", "PROJECT PREVIEW", "EXPERIMENT", and "NOTEBOOK PREVIEW".
- Top Bar:** Includes a search bar labeled "Search experiment templates" and a "VIEW MORE IN GALLERY" link.
- Main Content Area:** Displays a grid of experiment templates under the heading "Microsoft Samples". The visible templates include:
 - Blank Experiment:** Represented by a large plus sign icon.
 - Experiment Tutorial:** Represented by a green background with a white arrow icon.
 - Sample 1: Download dataset from UCI: Adult 2 class dataset:** Represented by an icon of a database cylinder with a green arrow pointing down.
 - Sample 2: Dataset Processing and Analysis: Auto Imports Regression:** Represented by an icon of a magnifying glass over a scatter plot.
 - Sample 3: Cross**
 - Sample 4: Cross**
 - Sample 5: Train, Test,**
 - Sample 6: Train, Test,**

The bottom right corner shows a zoom level of 100%.

ML Studio: A Interface

The screenshot displays the Microsoft Azure Machine Learning Studio interface. At the top, the browser address bar shows the URL `https://studio.azureml.net/Home/ViewWorkspaceC`. The application header includes the title "Microsoft Azure Machine Learning Studio" and the user name "Charles Bauer-Free-Works...".

On the left, a sidebar lists various experiment items for search and drag-and-drop: Saved Datasets, Trained Models, Transforms, Data Format Conversions, Data Input and Output, Data Transformation, Feature Selection, Machine Learning, OpenCV Library Modules, Python Language Modules, R Language Modules, and Statistical Functions.

The central workspace is titled "Experiment created on 06/11/2016" and is in "In draft" status. It contains a large dashed box with the text "To create your experiment, drag and drop datasets and modules here" and "Drag Items Here" with an arrow pointing to the box. A "Mini Map" window is visible in the bottom-left corner of the workspace.

On the right, a sidebar contains the "Properties" and "Project" tabs. Under "Properties", there are sections for "Experiment Properties" (with "STATUS CODE" and "InDraft") and "Summary" (with a text area for a description). Below these is a "Description" section with another text area. At the bottom of the sidebar is a "Quick Help" section.

The bottom of the interface features a dark blue toolbar with icons for "NEW", "RUN HISTORY", "SAVE", "SAVE AS", "DISCARD CHANGES", "RUN", "SET UP WEB SERVICE", and "PUBLISH TO GALLERY".

ML Studio: Obtendo os dados

The screenshot displays the Microsoft Azure Machine Learning Studio web interface. The browser address bar shows the URL `https://studio.azureml.net/Home/ViewWorkspaceC...`. The interface includes a top navigation bar with 'File', 'Edit', 'View', 'Favorites', 'Tools', and 'Help' menus. The main workspace is titled 'Microsoft Azure Machine Learning Studio' and shows an experiment created on 06/11/2016, currently in 'In draft' status. On the left, a sidebar lists 'Saved Datasets' under 'My Datasets', including 'Adult Census Income...', 'Airport Codes Dataset', 'Automobile price dat...', 'Bike Rental UCI datas...', 'Bill Gates RGB Image', 'Blood donation data', 'Book Reviews from A...', 'Breast cancer data', 'Breast Cancer Features', and 'Breast Cancer Info'. The main workspace contains a diagram with a single node labeled 'Adult Census Income Binary...' with a circled '1' next to it. A 'Mini Map' window in the bottom-left of the workspace shows a smaller version of this diagram. The right sidebar displays the 'Properties' for the selected dataset, 'Adult Census Income Binary Cla...', with details: SUBMITTED BY (Microsoft C...), SIZE (3.82 MB), FORMAT (GenericCSV), and CREATED ON (4/8/2015 7:...), along with a 'View dataset' link. A 'Quick Help' section at the bottom right shows 'Census Income dataset'. The bottom toolbar includes icons for '+ NEW', 'RUN HISTORY', 'SAVE', 'SAVE AS', 'DISCARD CHANGES', 'RUN', 'SET UP WEB SERVICE', and 'PUBLISH TO GALLERY'. The bottom right corner shows a zoom level of 100%.

ML Studio: Analisando os dados

The screenshot displays the Microsoft Azure Machine Learning Studio web interface. The browser address bar shows the URL `https://studio.azureml.net/Home/ViewWorkspaceC`. The top navigation bar includes a hamburger menu, the text "Microsoft Azure Machine Learning Studio", the user name "Charles Bauer-Free-Works...", and icons for help, team, and profile.

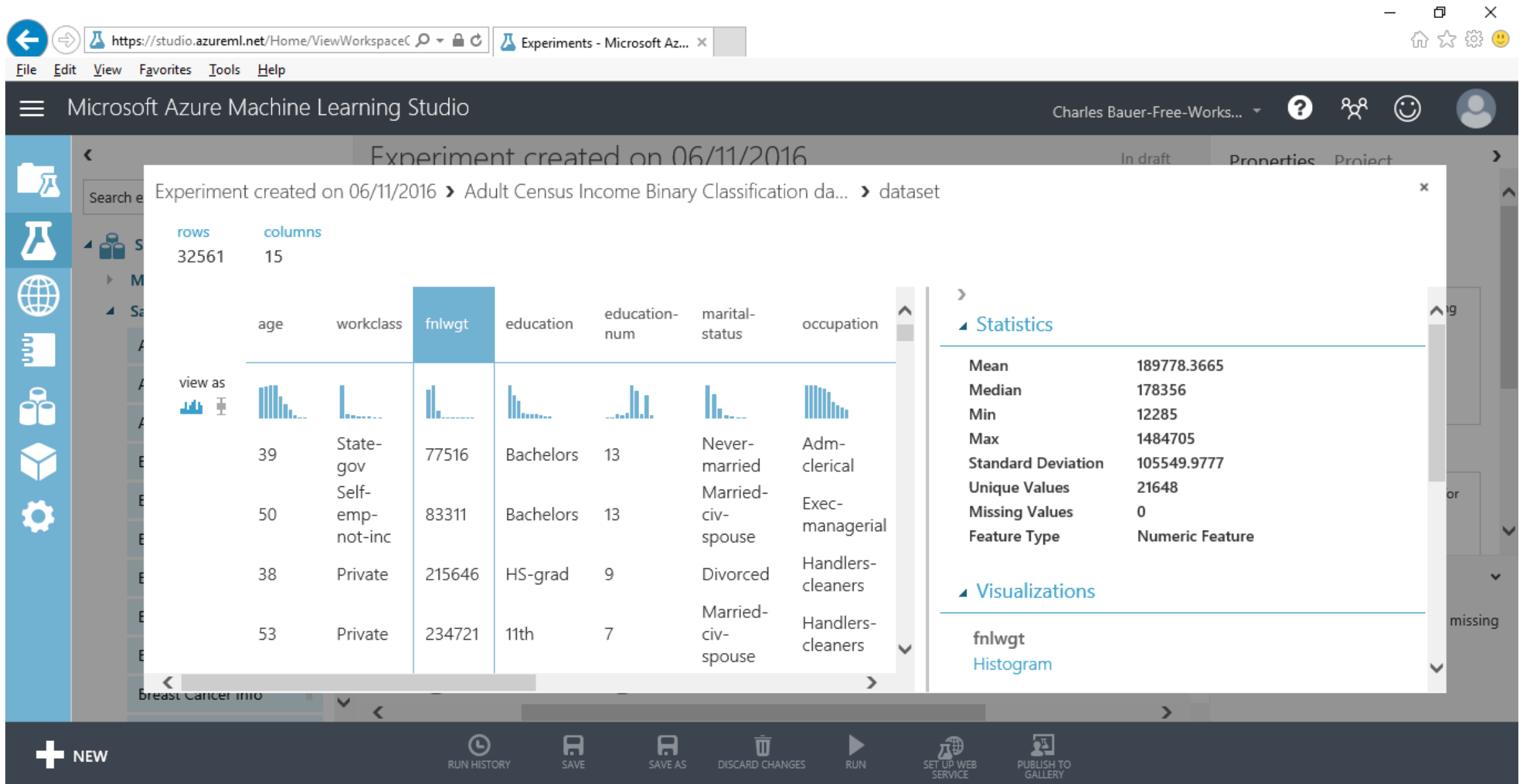
On the left sidebar, the "Saved Datasets" section is expanded, showing a list of datasets under "My Datasets" and "Samples". The "Samples" list includes "Adult Census Income...", "Airport Codes Dataset", "Automobile price dat...", "Bike Rental UCI datas...", "Bill Gates RGB Image", "Blood donation data", "Book Reviews from A...", "Breast cancer data", "Breast Cancer Features", and "Breast Cancer Info".

The main workspace area shows an experiment created on 06/11/2016, currently in "In draft" status. A dataset named "Adult Census Income Binary..." is selected, and a context menu is open with options: "Download", "Visualize" (highlighted), "Generate Data Access Code...", and "Open in a new Notebook". A "Mini Map" view at the bottom left shows the dataset as a "dataset (GenericCSV)".

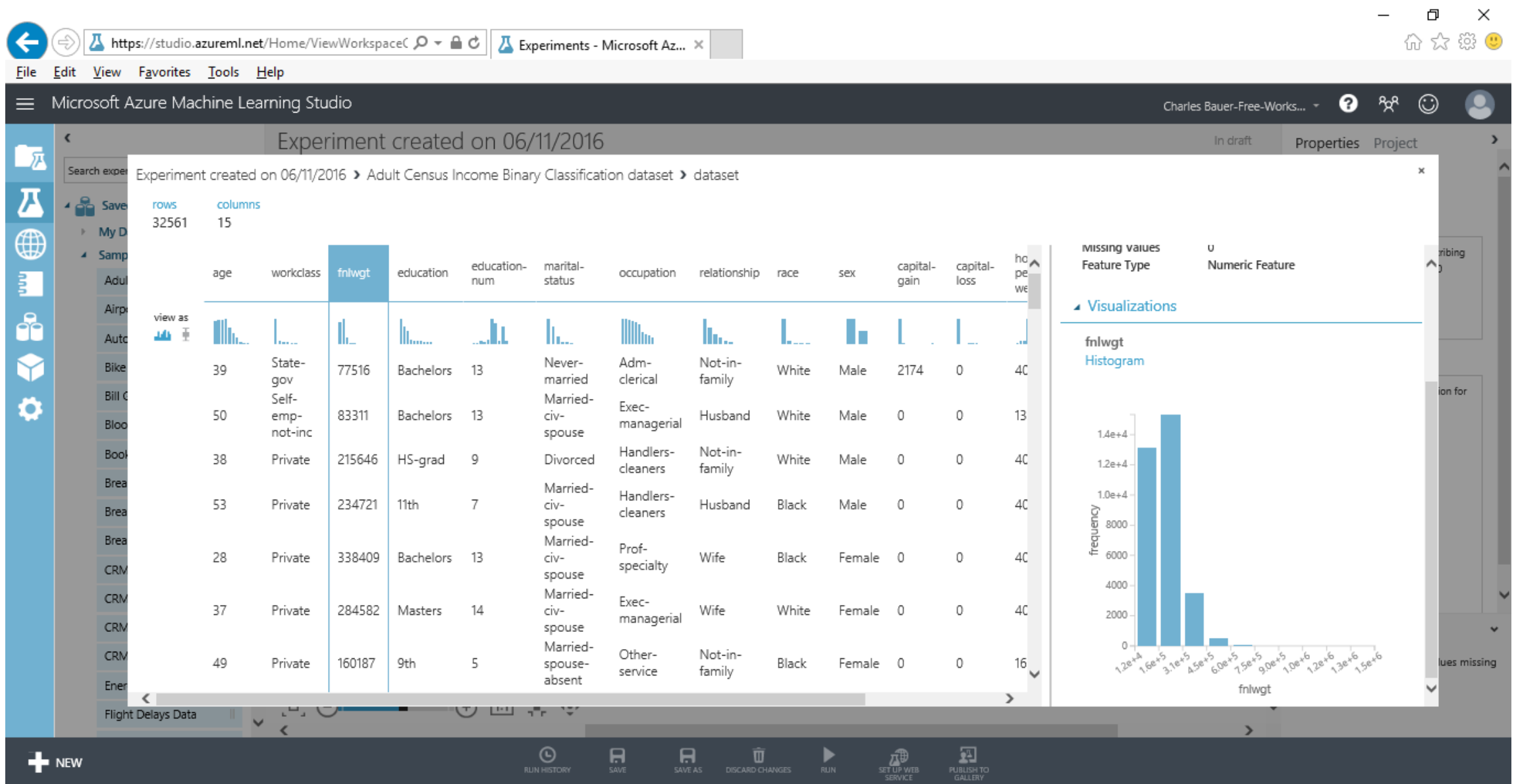
On the right sidebar, the "Properties" and "Project" tabs are visible. The "Experiment Properties" section shows the status as "InDraft". The "Summary" section prompts the user to "Enter a few sentences describing your experiment (up to 140 characters)". The "Description" section prompts the user to "Enter the detailed description for your experiment". A "Quick Help" section at the bottom right provides information on handling missing values.

The bottom toolbar contains icons for "NEW", "RUN HISTORY", "SAVE", "SAVE AS", "DISCARD CHANGES", "RUN", "SET UP WEB SERVICE", and "PUBLISH TO GALLERY". The bottom right corner shows a zoom level of 100%.

ML Studio: Analisando os dados



ML Studio: Analisando os dados



ML Studio: Tratando os dados

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The top navigation bar includes the URL <https://studio.azureml.net/Home/ViewWorkspaceC> and the text "Experiments - Microsoft Az...". The main header shows "Microsoft Azure Machine Learning Studio" and the user "Charles Bauer-Free-Works...".

The left sidebar contains a "Manipulation" section with the following options: Add Columns, Add Rows, Apply SQL Transform..., Clean Missing Data, Convert to Indicator..., Edit Metadata, Group Categorical Va..., Join Data, Remove Duplicate Ro..., Select Columns in Da..., Select Columns Trans..., and SMOTE.

The central workspace shows an experiment created on 06/11/2016. The workflow consists of two steps: "Adult Census Income Binary..." and "Clean Missing Data". The "Clean Missing Data" step is highlighted with a blue border and numbered 1 and 2. A "Mini Map" in the bottom left corner provides a overview of the workflow.

The right sidebar shows the "Properties" panel for the "Clean Missing Data" step. It includes the following settings:

- Clean Missing Data**
- Columns to be cleaned: **Selected columns: All columns**
- Launch column selector
- Minimum missing valu...: **0**
- Maximum missing valu...: **1**
- Cleaning mode: **Custom substitution vali**
- Replacement value

The bottom status bar includes icons for "NEW", "RUN HISTORY", "SAVE", "SAVE AS", "DISCARD CHANGES", "RUN", "SET UP WEB SERVICE", and "PUBLISH TO GALLERY".

ML Studio: Tratando os dados

The screenshot displays the Microsoft Azure Machine Learning Studio interface. A 'Select columns' dialog box is open in the center, allowing users to choose which columns to include in their dataset. The dialog has two tabs: 'BY NAME' and 'WITH RULES', with 'WITH RULES' currently selected. Under the 'Begin With' section, there are two buttons: 'ALL COLUMNS' and 'NO COLUMNS', with 'NO COLUMNS' being the active selection. Below this, there are two dropdown menus: 'Include' and 'column names'. The 'column names' dropdown is open, showing a list of column names. Two columns, 'native-country' and 'workclass', are selected and highlighted in blue. To the right of the column list, there are '+' and '-' buttons for adding or removing columns. At the bottom right of the dialog, there is a checkmark button to confirm the selection. The background shows the main workspace with a sidebar on the left containing icons for Saved Datasets, Trained Models, Transforms, Data Format Conversion, Data Input and Output, Data Transformation, Feature Selection, and Machine Learning. The top bar includes the URL 'https://studio.azureml.net/Home/ViewWorkspaceC...' and the user name 'Charles Bauer-Free-Works...'. The bottom bar contains icons for NEW, RUN HISTORY, SAVE, SAVE AS, DISCARD CHANGES, RUN, SET UP WEB SERVICE, and PUBLISH TO GALLERY.

Microsoft Azure Machine Learning Studio

Training experiment Predictive experiment

Properties Project

Search experiment items

BY NAME

WITH RULES

Allow duplicates and preserve column order in selection

Begin With

ALL COLUMNS NO COLUMNS

Include column names

native-country workclass

Missing Data

ns to be cleaned

ected columns:

mn names:

e-

try,workclass

ch column selector

um missing valu...

um missing valu...

ing mode

Help

ow to handle the values missing

aset

...

Cross Validate Model

NEW

RUN HISTORY

SAVE

SAVE AS

DISCARD CHANGES

RUN

SET UP WEB SERVICE

PUBLISH TO GALLERY

ML Studio: Tratando os dados: remover linhas

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The main workspace shows a workflow with two steps: 'Adult Census Income Binary...' and 'Clean Missing Data'. The 'Clean Missing Data' step is highlighted with a green checkmark and a red box around its 'Cleaning mode' dropdown, which is set to 'Remove entire row'. The right sidebar shows the 'Properties' pane for the 'Clean Missing Data' step, with the 'Cleaning mode' dropdown highlighted by a red box. The bottom toolbar includes buttons for 'NEW', 'RUN HISTORY', 'SAVE', 'SAVE AS', 'DISCARD CHANGES', 'RUN', 'SET UP WEB SERVICE', and 'PUBLISH TO GALLERY'.

Microsoft Azure Machine Learning Studio

Experiment created on 06/11/2016

Training experiment | Predictive experiment

Adult Census Income Binary...

Clean Missing Data

1 2

Properties

Columns to be cleaned

Selected columns:

Column names:

native-country,workclass

Launch column selector

Minimum missing value...

0

Maximum missing value...

1

Cleaning mode

Remove entire row

START TIME 11/6/20

Quick Help

Specifies how to handle the values missing from a dataset (more help...)

ML Studio: Tratando os dados: selecionando colunas

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The top navigation bar includes the URL `https://studio.azureml.net/Home/ViewWorkspaceC` and the title "Experiments - Microsoft Az...". The main header shows "Microsoft Azure Machine Learning Studio" and the user "Charles Bauer-Free-Works...".

On the left, a sidebar contains icons for various tools. A search bar with the text "select co" is visible. Below it, the "Data Transformation" section is expanded, showing a "Manipulation" sub-section with two options: "Select Columns in Datas..." and "Select Columns Transfor...".

The central workspace shows an experiment created on 06/11/2016, currently in draft status. The workflow consists of three steps: "Adult Census Income Binary...", "Clean Missing Data", and "Select Columns in Dataset". The "Select Columns in Dataset" step is highlighted with a blue border and a circled "1". A "Mini Map" in the bottom-left corner provides a overview of the workflow.

On the right, the "Properties" pane is open for the "Select Columns in Dataset" step. It shows the "Select columns" section with the following settings:

- Selected columns:** All columns
- Exclude column names:** fnlwgt, education-num

A "Launch column selector" button is located below these settings. The "Quick Help" section at the bottom right explains that this step "Selects columns to include or exclude from a dataset in an operation. Formerly known as Project Columns." and provides a link to "(more help...)".

The bottom status bar includes icons for "NEW", "RUN HISTORY", "SAVE", "SAVE AS", "DISCARD CHANGES", "RUN", "SET UP WEB SERVICE", and "PUBLISH TO GALLERY". The zoom level is set to 100%.

ML Studio: Separando dados de aprendizado e teste

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The top navigation bar includes the URL `https://studio.azureml.net/Home/ViewWorkspaceC` and the title "Experiments - Microsoft Az...". The main header shows "Microsoft Azure Machine Learning Studio" and the user "Charles Bauer-Free-Works...".

On the left, a sidebar contains a search bar with the text "split" and a list of categories: "Saved Datasets" (with "Restaurant ratings" listed), "Data Transformation", and "Sample and Split" (with "Partition and Sample" and "Split Data" listed). The "Split Data" option is highlighted.

The central workspace shows a workflow titled "Experiment created on 06/11/2016" in "draft" status. The workflow consists of four steps: "Adult Census Income Binary...", "Clean Missing Data", "Select Columns in Dataset", and "Split Data". The "Split Data" step is highlighted with a blue border and numbered 1 and 2. A "Mini Map" in the bottom-left corner provides a visual overview of the entire workflow.

On the right, the "Properties" pane for the "Split Data" step is visible. It includes the following settings:

- Splitting mode:** Split Rows
- Fraction of rows in the fir...:** 0.7
- Randomized split:** ☒
- Random seed:** 123414
- Stratified split:** False

Below the properties is a "Quick Help" section with the text: "Split the rows of a dataset into two distinct sets (more help...)".

The bottom toolbar contains icons for "NEW", "RUN HISTORY", "SAVE", "SAVE AS", "DISCARD CHANGES", "RUN", "SET UP WEB SERVICE", and "PUBLISH TO GALLERY". The bottom right corner shows a zoom level of "100%".

ML Studio: Escolhendo o algoritmo

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The top navigation bar includes the URL <https://studio.azureml.net/Home/ViewWorkspaceC> and the text "Experiments - Microsoft Az...". The main header shows "Microsoft Azure Machine Learning Studio" and the user "Charles Bauer-Free-Works...".

On the left, a sidebar contains a search bar "Search experiment items" and a list of experiment items under the "Train" category:

- Evaluate
- Initialize Model
- Score
- Train
 - Sweep Clustering
 - Train Anomaly Detec...
 - Train Clustering Model
 - Train Matchbox Reco...
 - Train Model
 - Tune Model Hyperpa...
- OpenCV Library Modules
- Python Language Modules
- R Language Modules

The central workspace shows a workflow diagram titled "Experiment created on 06/11/2016". The workflow consists of the following steps:

- Adult Census Income Binary...
- Clean Missing Data
- Select Columns in Dataset
- Split Data
- Train Model (highlighted with a red circle and the number 1)

On the right, the "Properties" pane is visible, showing the "Train Model" section with the following text:

Label column

Selected columns:
Launch the selector tool to make a selection

Launch column selector

Below this, the "Quick Help" section provides instructions: "Train a previously created classification or regression model (more help...)"

The bottom status bar includes icons for "NEW", "RUN HISTORY", "SAVE", "SAVE AS", "DISCARD CHANGES", "RUN", "SET UP WEB SERVICE", and "PUBLISH TO GALLERY".

ML Studio: Escolhendo o algoritmo

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The top navigation bar includes the URL <https://studio.azureml.net/Home/ViewWorkspaceC> and the text "Experiments - Microsoft Az...". The main header shows "Microsoft Azure Machine Learning Studio" and the user "Charles Bauer-Free-Works...".

On the left, a sidebar lists experiment items under "Machine Learning":

- Evaluate
- Initialize Model
 - Anomaly Detection
 - Classification
 - Clustering
 - Regression
- Score
- Train
 - OpenCV Library Modules
 - Python Language Modules
 - R Language Modules
 - Statistical Functions

The main workspace shows a workflow titled "Experiment created on 06/11/2016" in "In draft" status. The workflow consists of the following steps:

- Adult Census Income Binary...
- Clean Missing Data
- Select Columns in Dataset
- Split Data
- Train Model (marked with a red exclamation mark and a "1" in a circle)

On the right, the "Properties" pane is active, showing the "Train Model" section. It indicates the "Label column" and provides instructions: "Selected columns: Launch the selector tool to make a selection" and "Launch column selector". Below this is a "Quick Help" section with the text: "Train a previously created classification or regression model (more help...)"

The bottom toolbar contains icons for: NEW, RUN HISTORY, SAVE, SAVE AS, DISCARD CHANGES, RUN, SET UP WEB SERVICE, and PUBLISH TO GALLERY. The status bar at the bottom right shows "100%" zoom.

ML Studio: Escolhendo o algoritmo

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The top navigation bar includes the URL <https://studio.azureml.net/Home/ViewWorkspaceC> and the title "Experiments - Microsoft Az...". The main header shows "Microsoft Azure Machine Learning Studio" and the user "Charles Bauer-Free-Works...".

On the left, a sidebar lists various machine learning algorithms under "Search experiment items". The "Two-Class Boosted Decision..." algorithm is highlighted. Below the list, there are tabs for "Clustering" and "Regression".

The central workspace shows a workflow diagram titled "Experiment created on 06/11/2016". The workflow consists of the following steps:

- Adult Census Income Binary...
- Clean Missing Data
- Select Columns in Dataset
- Split Data
- Two-Class Boosted Decision... (labeled with a circled '1')
- Train Model

The "Two-Class Boosted Decision..." step is currently selected, and its properties are shown on the right. The properties include:

- Create trainer mode: Single Parameter
- Maximum number of l...: 20
- Minimum number of s...: 10
- Learning rate: 0.2
- Number of trees const...: 100
- Random number seed

At the bottom, a toolbar contains icons for "NEW", "RUN HISTORY", "SAVE", "SAVE AS", "DISCARD CHANGES", "RUN", "SET UP WEB SERVICE", and "PUBLISH TO GALLERY".

ML Studio: Escolhendo qual coluna queremos prever

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The top navigation bar includes the URL <https://studio.azureml.net/Home/ViewWorkspaceC> and the text "Experiments - Microsoft Az...". The main header shows "Microsoft Azure Machine Learning Studio" and the user "Charles Bauer-Free-Works...".

On the left, a sidebar lists various machine learning tasks under "Clustering" and "Regression". The central workspace shows a workflow diagram titled "Experiment created on 06/11/2016". The workflow consists of the following steps:

- Adult Census Income Binary...
- Clean Missing Data
- Select Columns in Dataset
- Split Data
- Two-Class Boosted Decision...
- Train Model (highlighted with a blue border and a "1" in a circle)

On the right, the "Properties" pane is open, showing the "Train Model" section. It indicates the "Label column" and lists "Selected columns: income". A button labeled "Launch column selector" is visible.

The bottom of the interface features a toolbar with icons for "NEW", "RUN HISTORY", "SAVE", "SAVE AS", "DISCARD CHANGES", "RUN", "SET UP WEB SERVICE", and "PUBLISH TO GALLERY".

ML Studio: Pontuando o modelo

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The top navigation bar includes the URL `https://studio.azureml.net/Home/ViewWorkspaceC` and the title "Experiments - Microsoft Az...". The main header shows "Microsoft Azure Machine Learning Studio" and the user "Charles Bauer-Free-Works...".

On the left, a sidebar contains a search bar with the text "score" and a list of categories: "Feature Selection", "Machine Learning", and "Text Analytics". Under "Machine Learning", the "Score" category is expanded, showing options like "Apply Transformation", "Assign Data to Clusters", "Score Matchbox Rec...", and "Score Model".

The central workspace shows a workflow diagram titled "Experiment created on 06/11/2016". The workflow consists of the following steps:

- Adult Census Income Binary...
- Clean Missing Data
- Select Columns in Dataset
- Split Data
- Two-Class Boosted Decision... (connected to the "Train Model" step)
- Train Model
- Score Model (1)

On the right, the "Properties" pane is open for the "Score Model" step, showing the option "Append score column..." which is checked. Below this, a "Quick Help" section provides instructions: "Score a trained classification or regression model (more help...)".

The bottom of the interface features a toolbar with icons for "NEW", "RUN HISTORY", "SAVE", "SAVE AS", "DISCARD CHANGES", "RUN", "SET UP WEB SERVICE", and "PUBLISH TO GALLERY". The status bar at the very bottom indicates "100%" zoom.

ML Studio: Pontuando o modelo

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The top navigation bar includes the URL <https://studio.azureml.net/Home/ViewWorkspaceCached/a66445b2b36149e1806ccf84ec9472a2#> and the title "Experiments - Microsoft Az...". The main header shows "Microsoft Azure Machine Learning Studio" and the user "Charles Bauer-Free-Works...".

The left sidebar contains a search bar with "evalua" and a list of tools under "Machine Learning" and "Statistical Functions". The "Machine Learning" section includes "Evaluate" (Cross Validate Model, Evaluate Model, Evaluate Recommender) and "Statistical Functions" (Evaluate Probability Function). The "Statistical Functions" section includes "Evaluate Probability Function".

The central workspace shows a workflow diagram titled "Experiment created on 06/11/2016" and "In draft". The workflow consists of the following steps:

- Adult Census Income Binary...
- Clean Missing Data
- Select Columns in Dataset
- Split Data
- Two-Class Boosted Decision...
- Train Model
- Score Model

The right sidebar contains the "Properties" and "Project" tabs. The "Properties" tab shows "Experiment Properties" (STATUS CODE: InDraft) and "Summary" (Enter a few sentences describing your experiment (up to 140 characters)). The "Description" tab shows "Enter the detailed description for your experiment." The "Quick Help" section states: "Evaluates a scored classification or regression model with standard metrics (more help...)".

The bottom toolbar includes icons for "NEW", "RUN HISTORY", "SAVE", "SAVE AS", "DISCARD CHANGES", "RUN", "SET UP WEB SERVICE", and "PUBLISH TO GALLERY".

ML Studio: Pontuando o modelo

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The top navigation bar includes the URL `https://studio.azureml.net/Home/ViewWorkspaceC` and the title "Experiments - Microsoft Az...". The main header shows "Microsoft Azure Machine Learning Studio" and the user "Charles Bauer-Free-Works...".

The left sidebar contains a search bar "Search experiment items" and a list of categories: Saved Datasets, Trained Models, Transforms, Data Format Conversions, Data Input and Output, Data Transformation, Feature Selection, and Machine Learning. The "Machine Learning" category is expanded, showing "Evaluate" and "Cross Validate Model".

The central workspace displays a workflow diagram titled "Experiment created on 06/11/2016" with a status of "Finished running". The workflow consists of the following steps:

- Adult Census Income Binary...
- Clean Missing Data (checked)
- Select Columns in Dataset (checked)
- Split Data (checked)
- Two-Class Boosted Decision... (checked)
- Train Model (checked)
- Score Model

A context menu is open over the "Score Model" step, offering options: Download, Save as Dataset, Save as Trained Model, Save as Transform, Visualize, Generate Data Access Code..., and Open in a new Notebook.

The right sidebar contains the "Properties" and "Project" tabs. The "Experiment Properties" section shows:

Property	Value
START TIME	11/6/20...
END TIME	11/6/20...
STATUS CODE	Finished
STATUS DETAILS	None

The "Summary" section prompts the user to "Enter a few sentences describing your experiment (up to 140 characters)". The "Description" section is also visible.

The bottom status bar includes icons for "NEW", "RUN HISTORY", "SAVE", "SAVE AS", "DISCARD CHANGES", and "RUN". The bottom right corner shows a zoom level of "100%".

ML Studio: Pontuando o modelo

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The main window shows a 'Scored dataset' with 9215 rows and 15 columns. The dataset includes features like sex, capital-gain, capital-loss, hours-per-week, native-country, and income, along with 'Scored Labels' and 'Scored Probabilities'. A sidebar on the left contains icons for various ML Studio components. The right sidebar shows 'Statistics' and 'Visualizations' for the 'Scored Labels'.

Experiment created on 06/11/2016 > Score Model > Scored dataset

rows: 9215, columns: 15

	sex	capital-gain	capital-loss	hours-per-week	native-country	income	Scored Labels	Scored Probabilities
Black	Male	0	0	40	United-States	<=50K	<=50K	0.134826
White	Male	0	0	66	United-States	<=50K	>50K	0.594554
White	Male	0	1902	50	United-States	>50K	>50K	0.997685
White	Male	0	0	20	United-	<=50K	<=50K	0.000916

Statistics

- Unique Values: 2
- Missing Values: 145
- Feature Type: String Score

Visualizations

Scored Labels Histogram

6000

NEW RUN HISTORY SAVE SAVE AS DISCARD CHANGES RUN SET UP WEB SERVICE PUBLISH TO GALLERY

100%

ML Studio: Pontuando o modelo

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The top navigation bar includes the URL `https://studio.azureml.net/Home/ViewWorkspaceC` and the workspace name "Experiments - Microsoft Az...". The main header shows "Microsoft Azure Machine Learning Studio" and the user "Charles Bauer-Free-Works...".

On the left, a sidebar contains a search bar with "evalua" and a list of tools under "Machine Learning":

- Evaluate**
 - Cross Validate Model
 - Evaluate Model
 - Evaluate Recommender
- Statistical Functions**
 - Evaluate Probability Function

The central workspace shows a workflow titled "Experiment created on 06/11/2016" in "In draft" status. The workflow steps are:

- Adult Census Income Binary...
- Clean Missing Data
- Select Columns in Dataset
- Split Data
- Two-Class Boosted Decision... (connected to Train Model)
- Train Model
- Score Model
- Evaluate Model (highlighted with a blue border and a "1" in a circle)

On the right, the "Properties" pane shows the selected "Evaluate Model" step with "No parameters". Below it, the "Quick Help" section states: "Evaluates a scored classification or regression model with standard metrics (more help...)".

The bottom toolbar includes icons for "NEW", "RUN HISTORY", "SAVE", "SAVE AS", "DISCARD CHANGES", "RUN", "SET UP WEB SERVICE", and "PUBLISH TO GALLERY".

ML Studio: Pontuando o modelo

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The top navigation bar includes the URL <https://studio.azureml.net/Home/ViewWorkspaceCached/a66445b2b36149e1806ccf84ec9472a2#> and the title "Experiments - Microsoft Az...". The main header shows "Microsoft Azure Machine Learning Studio" and the user "Charles Bauer-Free-Works...".

The left sidebar contains a search bar with "evalu" and a list of categories: "Machine Learning" (with sub-items "Evaluate", "Cross Validate Model", "Evaluate Model", "Evaluate Recommender") and "Statistical Functions" (with "Evaluate Probability Function").

The central workspace shows a workflow diagram titled "Experiment created on 06/11/2016". The workflow steps are: "Adult Census Income Binary..." (input), "Clean Missing Data" (checked), "Select Columns in Dataset" (checked), "Split Data" (checked), "Train Model" (checked), "Score Model" (checked), and "Evaluate Model" (selected). A "Two-Class Boosted Decision..." model is also shown, connected to the "Train Model" step. The "Evaluate Model" step is highlighted with a blue border, and a context menu is open with options "Run" and "Run selected".

The right sidebar contains a "Properties" section for the "Evaluate Model" step, showing "No parameters". Below it is a "Quick Help" section with the text: "Evaluates a scored classification or regression model with standard metrics (more help...)".

The bottom toolbar includes icons for "NEW", "RUN HISTORY", "SAVE", "SAVE AS", "DISCARD CHANGES", "RUN", "SET UP WEB SERVICE", and "PUBLISH TO GALLERY".

ML Studio: Pontuando o modelo

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The top navigation bar includes the URL `https://studio.azureml.net/Home/ViewWorkspaceC` and the title "Experiments - Microsoft Az...". The main header shows "Microsoft Azure Machine Learning Studio" and the user "Charles Bauer-Free-Works...".

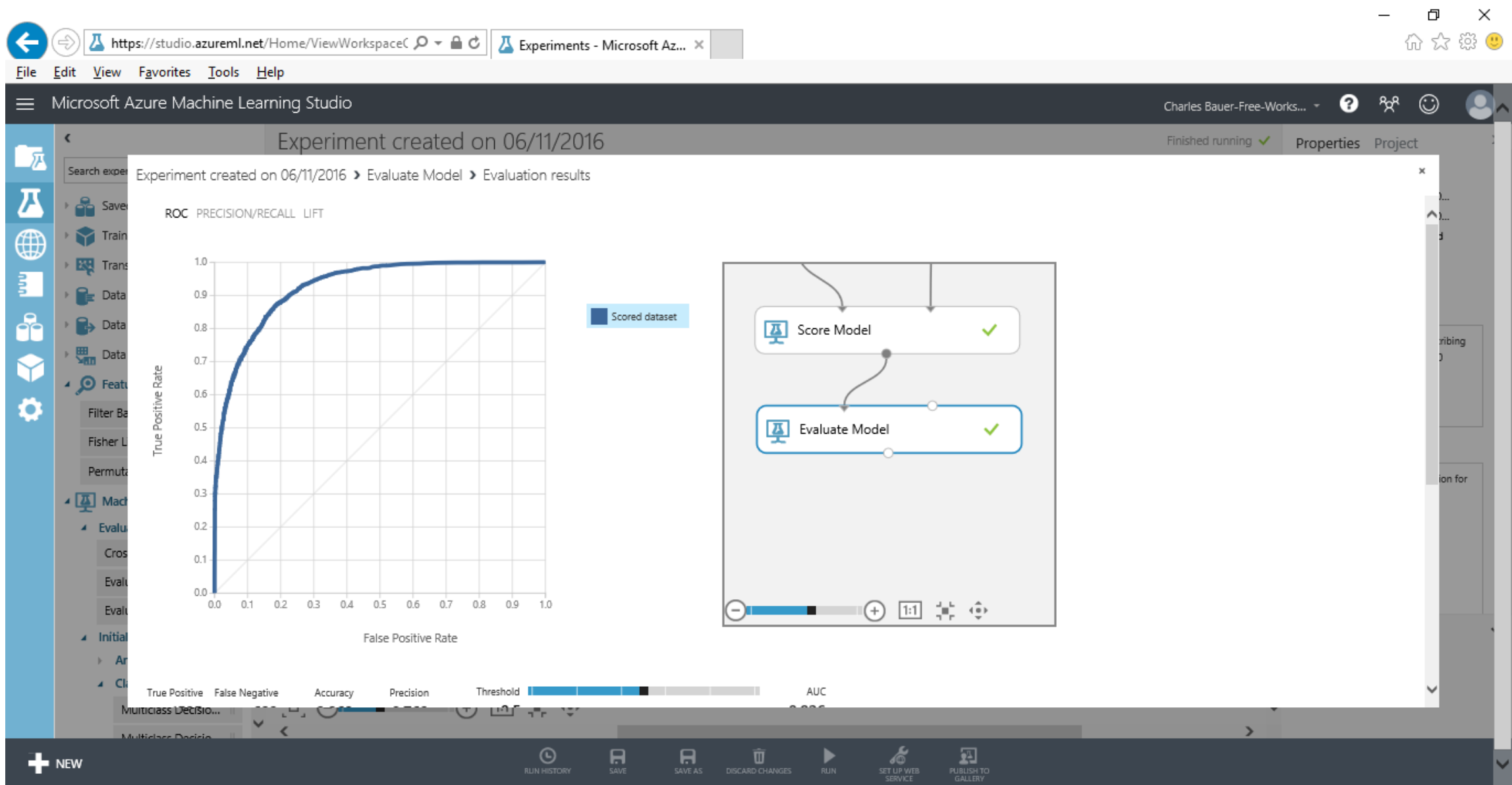
On the left, a sidebar lists experiment items: Saved Datasets, Trained Models, Transforms, Data Format Conversions, Data Input and Output, Data Transformation, Feature Selection (highlighted), and Machine Learning. Under Feature Selection, options like Filter Based Feature Sele..., Fisher Linear Discrimina..., and Permutation Feature Im... are visible. Under Machine Learning, the Evaluate section is active, showing Cross Validate Model.

The central workspace shows a workflow diagram titled "Experiment created on 06/11/2016" with a status of "Finished running". The workflow steps are: Adult Census Income Binary..., Clean Missing Data (checked), Select Columns in Dataset (checked), Split Data (checked), Train Model (checked), Score Model, Evaluate Model, and Two-Class Boosted Decision... (checked). A context menu is open over the Score Model step, offering actions: Download, Save as Dataset, Save as Trained Model, Save as Transform, Visualize, Generate Data Access Code..., and Open in a new Notebook.

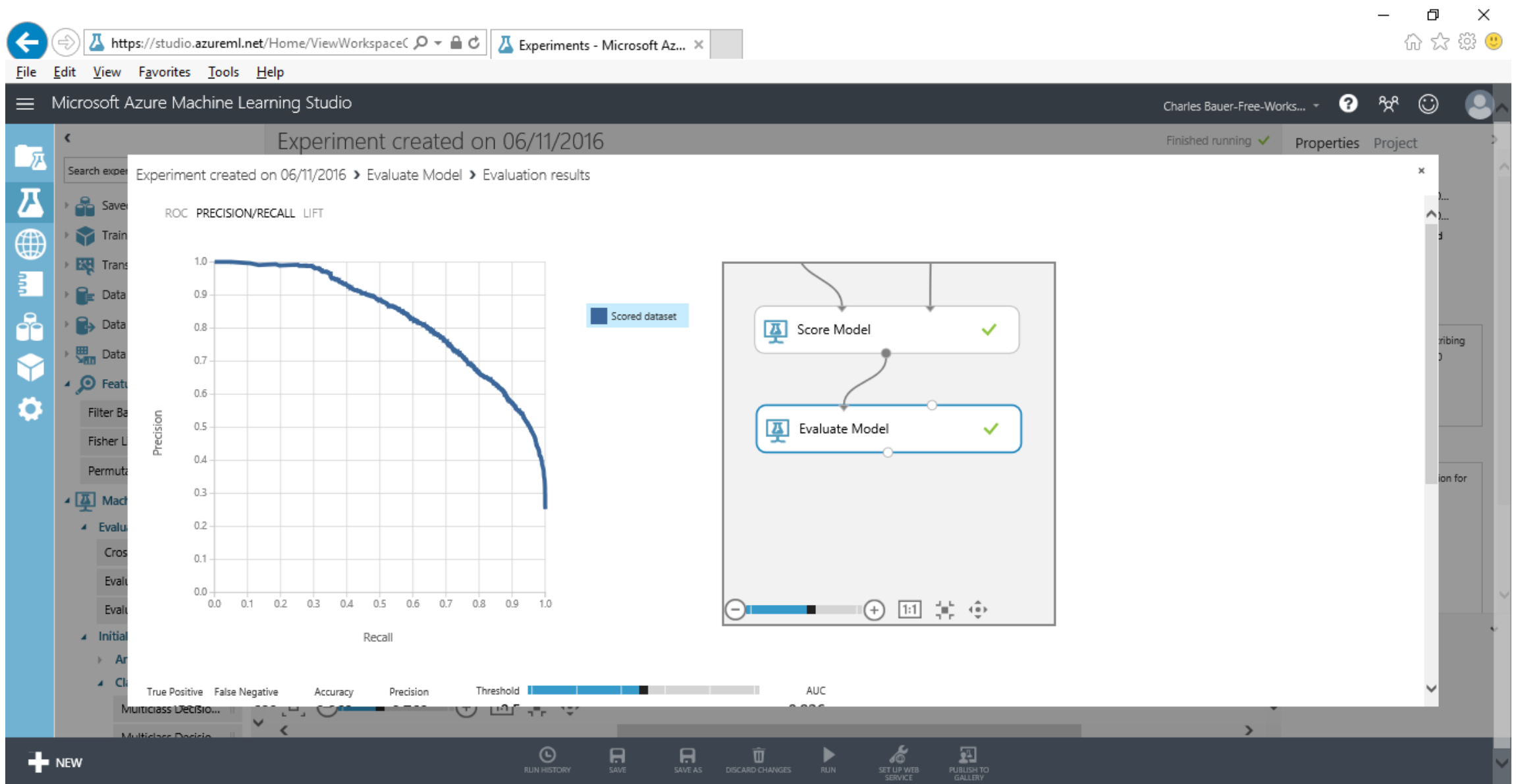
On the right, the Properties panel shows "Experiment Properties" with details: START TIME (11/6/20...), END TIME (11/6/20...), STATUS CODE (Finished), and STATUS DETAILS (None). Below this is a "Summary" section with a text input field for describing the experiment.

The bottom toolbar contains icons for NEW, RUN HISTORY, SAVE, SAVE AS, DISCARD CHANGES, and RUN. The bottom right corner shows a zoom level of 100%.

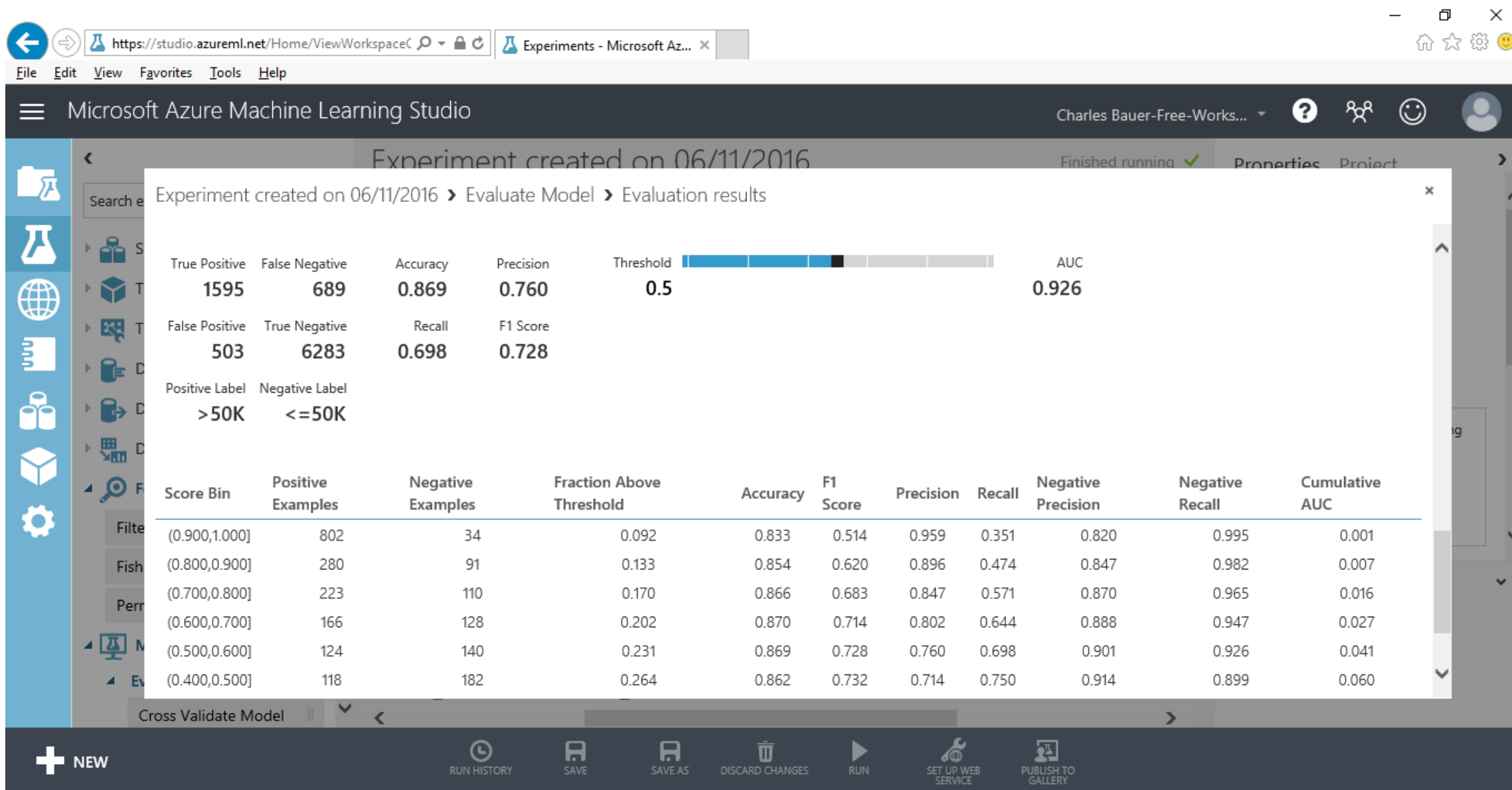
ML Studio: Pontuando o modelo



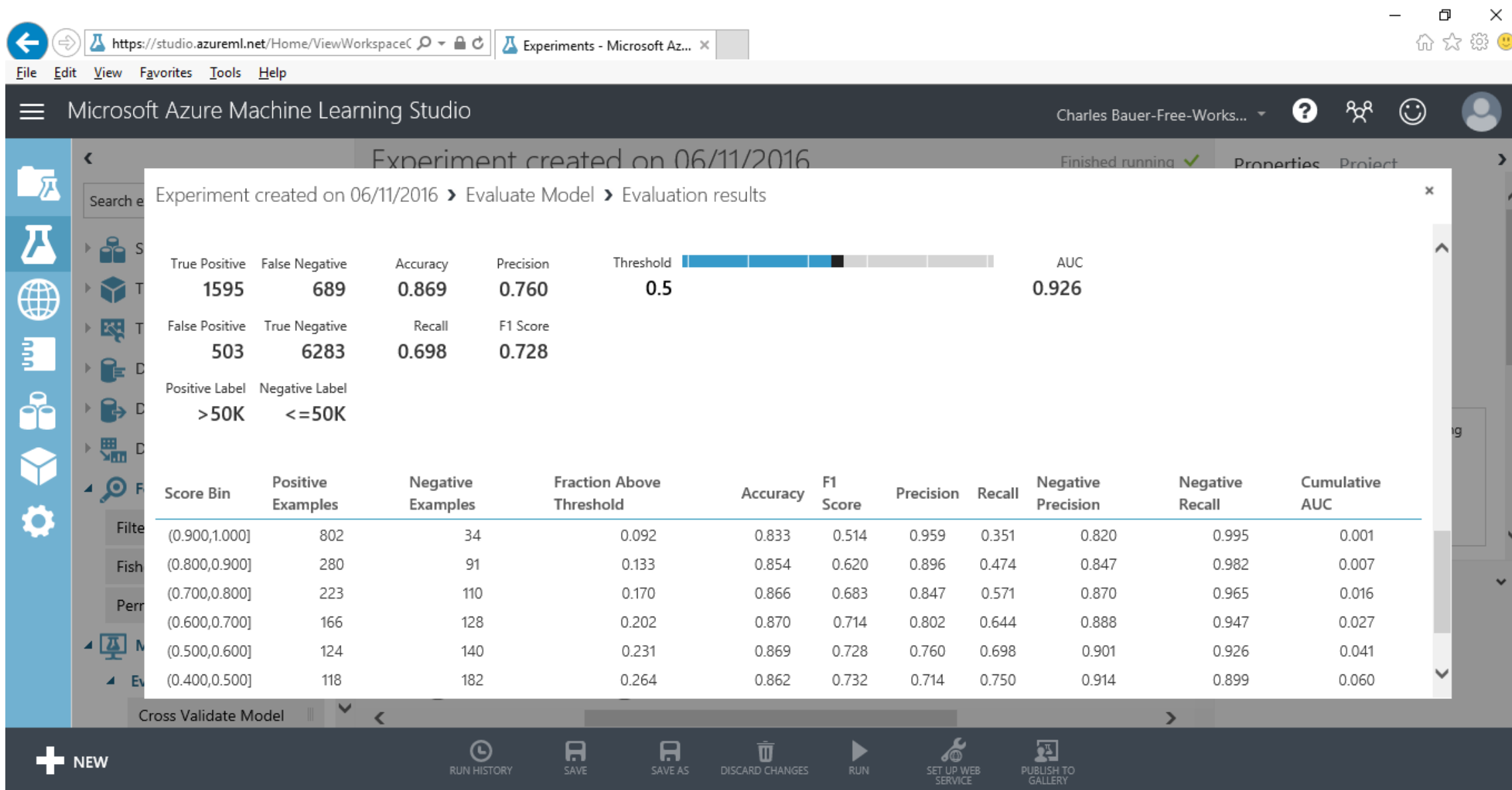
ML Studio: Pontuando o modelo



ML Studio: Pontuando o modelo



ML Studio: Pontuando o modelo



ML Studio: Preparando o Webservice

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The top navigation bar includes the URL `https://studio.azureml.net/Home/ViewWorkspaceC...` and the title "Experiments - Microsoft Az...". The main header shows "Microsoft Azure Machine Learning Studio" and the user "Charles Bauer-Free-Works...".

The left sidebar contains a search bar "Search experiment items" and a list of categories: Saved Datasets, Trained Models, Transforms, Data Format Conversions, Data Input and Output, Data Transformation, Feature Selection (highlighted), and Machine Learning. Under Feature Selection, options include Filter Based Feature Sele..., Fisher Linear Discrimina..., and Permutation Feature Im... Under Machine Learning, the Evaluate section is active, showing Cross Validate Model.

The central workspace shows a workflow diagram titled "Experiment created on 06/11/2016" with a status of "Finished running". The workflow steps are: Adult Census Income Binary..., Clean Missing Data (checked), Select Columns in Dataset (checked), Split Data (checked), Train Model (checked), Score Model (checked), and Evaluate Model (checked). A "Two-Class Boosted Decision..." node is also visible. A zoom control is at the bottom of the workspace.

The right sidebar contains the "Properties" and "Project" tabs. Under "Experiment Properties", the details are: START TIME 11/6/20..., END TIME 11/6/20..., STATUS CODE Finished, and STATUS DETAILS None. There is a "Prior Run" link and a "Summary" section with a text box for describing the experiment.

The bottom toolbar includes icons for NEW, RUN HISTORY, SAVE, SAVE AS, DISCARD CHANGES, RUN, SET UP WEB SERVICE, and PUBLISH TO GALLERY. A dropdown menu for "SET UP WEB SERVICE" is open, showing "Predictive Web Service [Recommended]" and "Retraining Web Service".

ML Studio: Preparando o Webservice

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The top navigation bar includes the URL <https://studio.azureml.net/Home/ViewWorkspaceCached/a66445b2b36149e1806ccf84ec9472a2?#> and the title "Experiments - Microsoft Az...". The main header shows "Microsoft Azure Machine Learning Studio" and the user "Charles Bauer-Free-Works...".

The left sidebar contains a search bar "Search experiment items" and a list of categories: Saved Datasets, Trained Models, Transforms, Data Format Conversions, Data Input and Output, Data Transformation, Feature Selection (expanded), and Machine Learning. Under Feature Selection, options include Filter Based Feature Sele..., Fisher Linear Discrimina..., and Permutation Feature Im....

The main workspace is titled "Experiment created on 06/11/2016 [Predictive Exp.] In draft". It shows a workflow diagram with the following steps: "Adult Census Income Binary...", "Experiment created on 0611...", "Select Columns in Dataset", "Apply Transformation", "Two-Class Boosted Decision Split Data", "Experiment created on 0611...", and "Evaluate Model Score Model".

The right sidebar contains the "Properties" and "Project" tabs. Under "Experiment Properties", it shows: START TIME (11/6/20...), END TIME (11/6/20...), STATUS CODE (InDraft), and STATUS DETAILS (None). Under "Summary", it prompts to "Enter a few sentences describing your experiment (up to 140 characters)". Under "Description", it has a "Quick Help" section.

The bottom status bar shows "Creating predictive experiment" and buttons for DETAILS, CLOSE, and a close icon. The bottom toolbar includes icons for NEW, RUN HISTORY, SAVE, SAVE AS, DISCARD CHANGES, RUN, SET UP WEB SERVICE, and PUBLISH TO GALLERY.

ML Studio: Preparando o Webservice

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The top navigation bar includes the URL <https://studio.azureml.net/Home/ViewWorkspaceCached/a66445b2b36149e1806ccf84ec9472a2?#> and the title "Experiments - Microsoft Az...". The main header shows "Microsoft Azure Machine Learning Studio" and the user "Charles Bauer-Free-Works...".

The left sidebar contains a search bar "Search experiment items" and a list of experiment items:

- Saved Datasets
- Trained Models
- Transforms
- Data Format Conversions
- Data Input and Output
- Data Transformation
- Feature Selection**
 - Filter Based Feature Sele...
 - Fisher Linear Discrimina...
 - Permutation Feature Im...
- Machine Learning**
 - Evaluate**
 - Cross Validate Model

The main workspace shows a "Predictive experiment" titled "Experiment created on 06/11/2016 [Predictive Exp.]". The workflow is as follows:

- Input: "Adult Census Income Binary..." dataset.
- Step 1: "Experiment created on 0611..." (labeled with a circled 1).
- Step 2: "Apply Transformation".
- Step 3: "Select Columns in Dataset".
- Step 4: "Experiment created on 0611..." (labeled with a circled 4).
- Step 5: "Score Model".
- Output: "Web service output".

Additional components in the workflow include "Web service input" and "Web service output". The status "In draft" and "Draft saved at 17:23:34" are visible.

The right sidebar shows the "Properties" tab with the following information:

- Experiment created on 0611201...**
- AUTHOR: charles
- CREATED ON: 11/6/2016...
- Training experiment

The bottom toolbar includes icons for "NEW", "RUN HISTORY", "SAVE", "SAVE AS", "DISCARD CHANGES", "RUN", "DEPLOY WEB SERVICE", and "PUBLISH TO GALLERY".

ML Studio: Preparando o Webservice para Publicação

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The top navigation bar includes the URL <https://studio.azureml.net/Home/ViewWorkspaceCached/a66445b2b36149e1806ccf84ec9472a2?#> and the title "Experiments - Microsoft Az...". The main workspace is titled "Microsoft Azure Machine Learning Studio" and shows a "Predictive experiment" workflow. The workflow consists of the following steps:

- Adult Census Income Binary...
- Experiment created on 06/11/2016 [Predictive Exp.] (Finished running)
- Web service input
- Apply Transformation (checked)
- Select Columns in Dataset (checked)
- Experiment created on 06/11/2016
- Score Model (checked)
- Web service output

The left sidebar contains a search bar and a list of experiment items:

- Search experiment items
- Saved Datasets
- Trained Models
- Transforms
- Data Format Conversions
- Data Input and Output
- Data Transformation
- Feature Selection
 - Filter Based Feature Sele...
 - Fisher Linear Discrimina...
 - Permutation Feature Im...
- Machine Learning
 - Evaluate
 - Cross Validate Model

The right sidebar shows the "Properties" and "Project" tabs. The "Experiment Properties" section displays:

Property	Value
START TIME	11/6/20...
END TIME	11/6/20...
STATUS CODE	Finished
STATUS DETAILS	None

The "Summary" section contains a text box for describing the experiment (up to 140 characters). The "Description" section is also visible.

The bottom toolbar includes icons for "NEW", "RUN HISTORY", "SAVE", "SAVE AS", "DISCARD CHANGES", "RUN", "DEPLOY WEB SERVICE", and "PUBLISH TO GALLERY".

ML Studio: Publicando o WebService

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The top navigation bar includes the URL `https://studio.azureml.net/Home/ViewWorkspaceC` and the title "Experiments - Microsoft Az...". The main header shows "Microsoft Azure Machine Learning Studio" and the user "Charles Bauer-Free-Works...".

The left sidebar contains a search bar "Search experiment items" and a list of experiment items:

- ▶ Saved Datasets
- ▶ Trained Models
- ▶ Transforms
- ▶ Data Format Conversions
- ▶ Data Input and Output
- ▶ Data Transformation
- ▶ **Feature Selection**
 - Filter Based Feature Sele...
 - Fisher Linear Discrimina...
 - Permutation Feature Im...
- ▶ **Machine Learning**
 - ▶ **Evaluate**
 - Cross Validate Model

The main workspace shows a "Predictive experiment" workflow titled "Experiment created on 06/11/2016 [Predictive Exp.]". The workflow is completed, indicated by "Finished running" with a green checkmark. The steps in the workflow are:

- Adult Census Income Binary...
- Experiment created on 0611...
- Web service input
- Apply Transformation (checked)
- Select Columns in Dataset (checked)
- Experiment created on 0611...
- Score Model (checked)
- Web service output

The right sidebar contains the "Properties" and "Project" tabs. Under "Experiment Properties", the following details are shown:

Property	Value
START TIME	11/6/20...
END TIME	11/6/20...
STATUS CODE	Finished
STATUS DETAILS	None

Under "Summary", there is a text box for describing the experiment (up to 140 characters).

Under "Description", there is a "Quick Help" section.

The bottom toolbar includes icons for "NEW", "RUN HISTORY", "SAVE", "SAVE AS", "DISCARD CHANGES", "RUN", "DEPLOY WEB SERVICE", and "PUBLISH TO GALLERY".

ML Studio: Informações do WebService

The screenshot displays the Microsoft Azure Machine Learning Studio web interface. The browser address bar shows the URL `https://studio.azureml.net/Home/ViewWorkspaceC`. The page title is "Microsoft Azure Machine Learning Studio". The user is logged in as "Charles Bauer-Free-Works...".

The main content area shows the configuration for an "experiment created on 06/11/2016 [predictive exp.]". The "DASHBOARD" tab is selected, and the "New Web Services Experience" is in preview. The "General" section includes a "Published experiment" status, links to "View snapshot" and "View latest", a "Description" field (currently empty), and an "API key" field containing the value `yVK24BlxKexPTR35ZrNm0q9pdeqYoOB9J3w0DEuje4fMfoTNk9gJwv061SKR3TUI7eeFvNf/YNg8Z6mpgQZejw==`. The "Default Endpoint" section is also visible.

The "TEST" tab is active, showing a table of test results. The table has columns for "API HELP PAGE", "TEST", "APPS", and "LAST UPDATED".

API HELP PAGE	TEST	APPS	LAST UPDATED
REQUEST/RESPONSE	Test <small>preview</small>	Excel 2013 or later Excel 2010 or earlier workbook	11/6/2016 5:26:16 PM
BATCH EXECUTION	Test <small>preview</small>	Excel 2013 or later workbook	11/6/2016 5:26:16 PM

The bottom of the interface features a dark blue bar with a "+ NEW" button and a "DELETE" button.

ML Studio: Submetendo dados dos Excel

Experiment created on 06_11_2016 [Predictive Exp.]-11_06_2016 19_27_53.xlsx [Somente leitura] - Excel

Arquivo Página Inicial Inserir Layout da Página Fórmulas Dados Revisão Exibir Suplementos LOAD TEST Team Design Diga-me... Charles Bauer Compartilhar

Nome da Tabela: Tabela1

Resumir com Tabela Dinâmica
Remover Duplicatas
Convert em Intervalo

Inserir Segmentação de Dados

Exportar Atualizar Desvincular

Propriedades
Abrir no Navegador

☒ Linha de Cabeçalho ☐ Primeira Coluna ☒ Botão Filtrar
☐ Linha de Totais ☐ Última Coluna
☒ Linhas em Tiras ☐ Colunas em Tiras

Opções de Estilo de Tabela

Estilos de Tabela

A1 age

age	workclas	fnlwgt	educatio	educatio	marital-s	occupati	relations	race	sex	capital-ga	capital-lo	hours-per
39	State-gov	77516	Bachelors	13	Never-marr	Adm-clerica	Not-in-fami	White	Male	2174	0	
50	Self-emp-ne	83311	Bachelors	13	Married-civ	Exec-manag	Husband	White	Male	0	0	
38	Private	215646	HS-grad	9	Divorced	Handlers-cl	Not-in-fami	White	Male	0	0	
53	Private	234721	11th	7	Married-civ	Handlers-cl	Husband	Black	Male	0	0	
28	Private	338409	Bachelors	13	Married-civ	Prof-special	Wife	Black	Female	0	0	

Sheet1

Pronto Média: 31740,43333 Contagem: 90 Soma: 952213 100%

Azure Machine Learning

← Experiment created on 06/11/2016 [Predictiv..

- VIEW SCHEMA
- PREDICT
- ERRORS

Input: input1

Sheet1!A1:O6

☒ My data has headers

Use sample data ?

Output: output1

Sheet1!A10

☒ Include headers

Predict Auto-predict

Help Privacy Statement

ML Studio: Submetendo dados dos Excel

Experiment created on 06_11_2016 [Predictive Exp.]-11_06_2016 19_27_53.xlsx [Somente leitura] - Excel

Arquivo Página Inicial Inserir Layout da Página Fórmulas Dados Revisão Exibir Suplementos LOAD TEST Team O que você deseja fazer... Charles Bauer Compartilhar

Colar Fonte Alinhamento RMS Número Estilo Células Edição

O19

	E	F	G	H	I	J	K	L	M	N	O	P
1	education	marital-s	occupati	relations	race	sex	capital-ga	capital-lo	hours-per	native-country	income	
2	13	Never-marr	Adm-clerica	Not-in-fami	White	Male	2174	0	40	United-States	<=50K	
3	13	Married-civ	Exec-manag	Husband	White	Male	0	0	13	United-States	<=50K	
4	9	Divorced	Handlers-cl	Not-in-fami	White	Male	0	0	40	United-States	<=50K	
5	7	Married-civ	Handlers-cl	Husband	Black	Male	0	0	40	United-States	<=50K	
6	13	Married-civ	Prof-special	Wife	Black	Female	0	0	40	Cuba	<=50K	
7												
8												
9												
10	occupation	relationship	race	sex	capital-gain	capital-loss	hours-per-w	native-count	income	Scored Labels	Scored Probabilities	
11	Adm-clerica	Not-in-fami	White	Male	2174	0	40	United-State	<=50K	<=50K	0.00713180331513286	
12	Exec-manag	Husband	White	Male	0	0	13	United-State	<=50K	<=50K	0.14166334271431	
13	Handlers-cl	Not-in-fami	White	Male	0	0	40	United-State	<=50K	<=50K	0.0109994746744633	
14	Handlers-cl	Husband	Black	Male	0	0	40	United-State	<=50K	<=50K	0.0599046312272549	
15	Prof-special	Wife	Black	Female	0	0	40	Cuba	<=50K	<=50K	0.296520590782166	
16												
17												
18												
19												
20												
21												
22												
23												

Sheet1

Pronto

Azure Machine Learning

← Experiment created on 06/11/2016 [Predictiv...

- VIEW SCHEMA
- PREDICT

Input: input1

Sheet1!A1:O6

☒ My data has headers

Use sample data

Output: output1

Sheet1!A10

☒ Include headers

Predict Auto-predict

3. ERRORS

Help Privacy Statement

ML Studio: Usando o modelo em apps Python

The screenshot displays the Microsoft Azure Machine Learning Studio interface. The browser address bar shows the URL `https://studio.azureml.net/Home/ViewWorkspaceC`. The page title is "Microsoft Azure Machine Learning Studio". The user is logged in as "Charles Bauer-Free-Works...".

The main content area shows the configuration for an "experiment created on 06/11/2016 [predictive exp.]". The "DASHBOARD" tab is selected, and the "General" section is active. The "New Web Services Experience" is marked as a "preview".

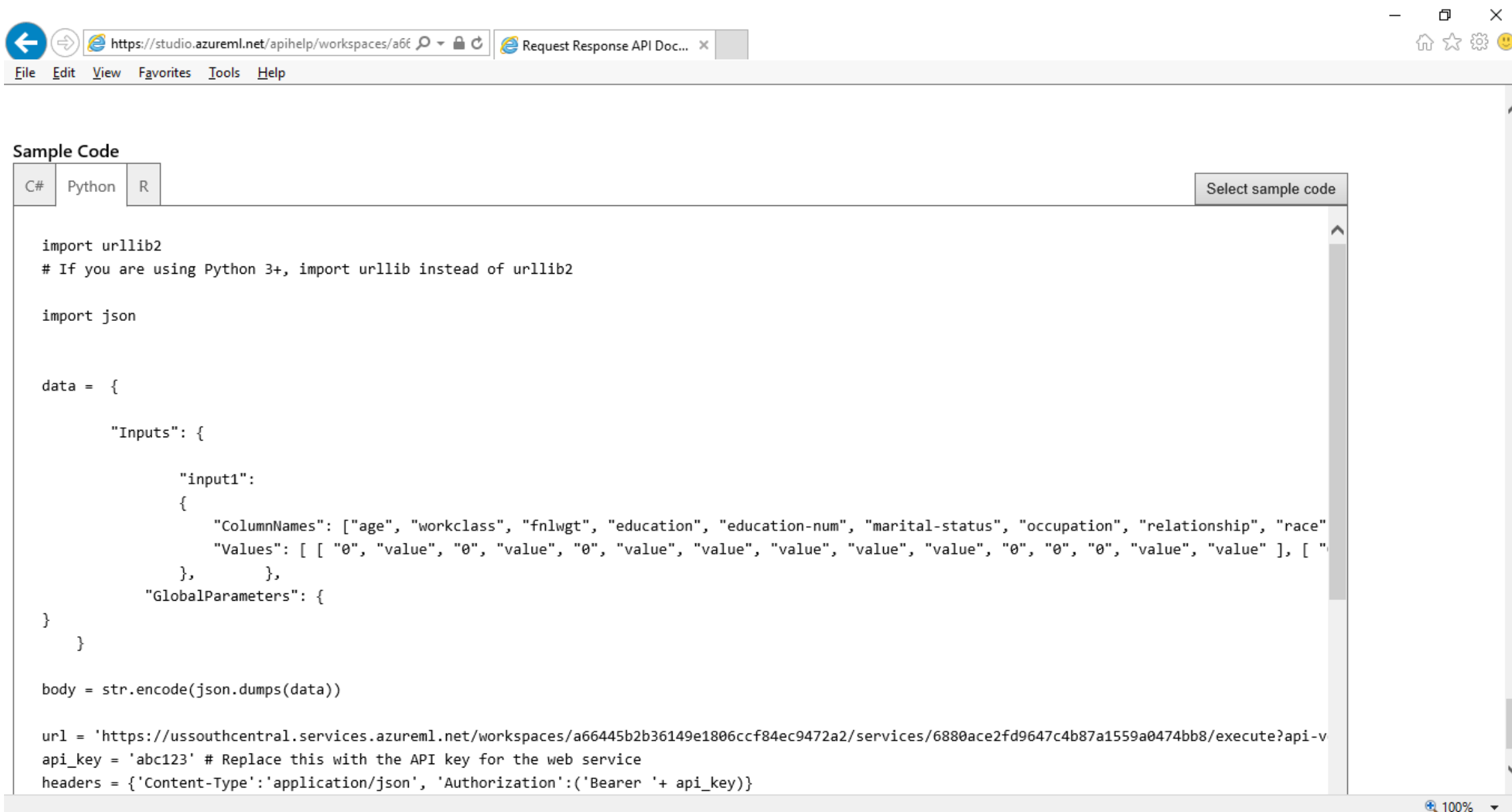
The "Published experiment" section includes links for "View snapshot" and "View latest". The "Description" section states "No description provided for this web service." The "API key" is displayed as `yVK24BlxKexPTR35ZrNm0q9pdeqYoOB9J3w0DEuje4fMfoTNk9gJwv061SKR3TUI7eeFvNf/YNg8Z6mpgQZejw==`. The "Default Endpoint" is also visible.

The "API HELP PAGE" section contains a table with columns: "TEST", "APPS", and "LAST UPDATED". The table lists two rows of data:

API HELP PAGE	TEST	APPS	LAST UPDATED
REQUEST/RESPONSE	Test Test preview	Excel 2013 or later Excel 2010 or earlier workbook	11/6/2016 5:26:16 PM
BATCH EXECUTION	Test preview	Excel 2013 or later workbook	11/6/2016 5:26:16 PM

The bottom of the interface features a dark blue bar with a "+ NEW" button and a "DELETE" button.

ML Studio: Usando o modelo em apps Python



The screenshot shows the Azure ML Studio web interface. The browser address bar displays `https://studio.azureml.net/apihelp/workspaces/a6f...`. The interface includes a menu bar with `File`, `Edit`, `View`, `Favorites`, `Tools`, and `Help`. A `Sample Code` section is active, with tabs for `C#`, `Python`, and `R`. The `Python` tab is selected, showing a code editor with the following Python code:

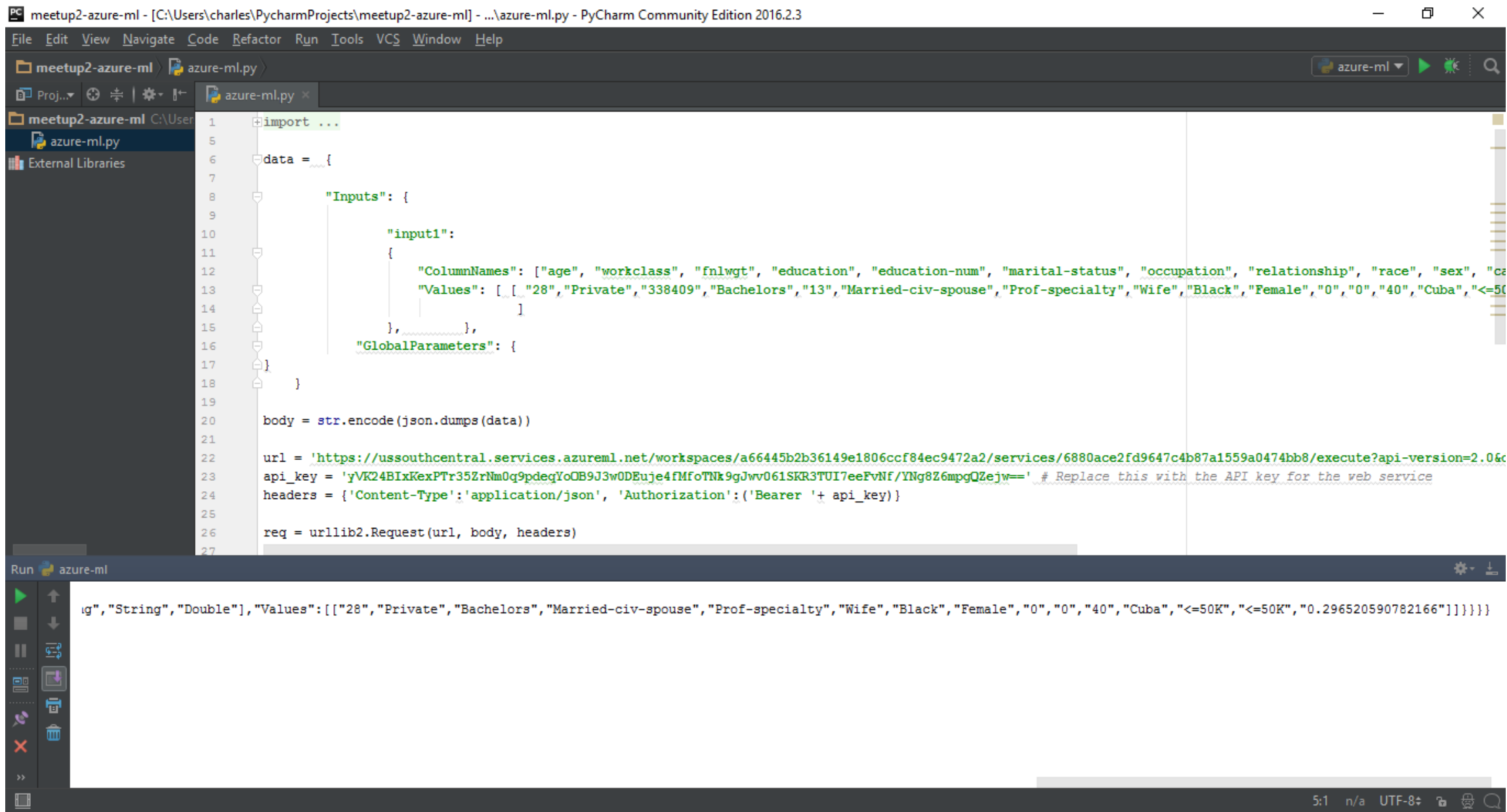
```
import urllib2
# If you are using Python 3+, import urllib instead of urllib2

import json

data = {
    "Inputs": {
        "input1": {
            "ColumnNames": ["age", "workclass", "fnlwgt", "education", "education-num", "marital-status", "occupation", "relationship", "race",
                           "Values": [ [ "0", "value", "0", "value", "0", "value", "value", "value", "value", "value", "0", "0", "0", "value", "value" ], [ "
```

The code defines a JSON object for the model's inputs, including column names and values. It then encodes the JSON to a string and constructs an HTTP request with the appropriate headers for the Azure ML API.

ML Studio: Usando o modelo em apps Python



Obrigado!

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