File Edit Selection View Go Debug Terminal Help train_ann.py - Artificial_Neural_Networks - Visual Studio Code EXPLORER 🕏 train_ann.py 🗙 ▲ OPEN EDITORS Preferences: Color Theme 🗙 🚭 train_ann.py \sim ▲ ARTIFICIAL_NEURAL_NETWORKS m sklearn.model_selection Help: Welcome .vscode Code Time: Dashboard 85 .directory Indent Using Spaces x_train, x_test, y_train, y_^t Go to File.. ≣ churn ann.hdf5 Ctrl + P Churn_Modelling.csv Rename Symbol saving-and-loading.txt Preferences: Open Keyboard Shortcuts (JSON) from sklearn.preprocessing 口 🔮 single_prediction.py Preferences: Open Keyboard Shortcuts Ctrl + K Ctrl + S sc = StandardScaler() x_train = sc.fit_transform(x_ View: Maximize Editor Group and Hide Sidebar Shift + Alt + M {} transform.json Escape Extensions: Show Disabled Extensions rt json with open("transform.json", File: New File Add Cursor Above json.dump(sc.get_params(Add Cursor Below Shift + Alt + DownArrow Add Cursors To Bottom ort keras Add Cursors to Line Ends Shift + Alt + I m keras.models import Sequ Add Cursors To Top from keras.layers import Dens classifier = Sequential() # classifier is the actual network classifier.add(Dense(6, input_dim=11, init="uniform", activation="relu")) classifier.add(Dense(6, init="uniform", activation="relu")) classifier.add(Dense(1, init="uniform", activation="sigmoid")) classifier.compile(optimizer="adam", loss="binary_crossentropy", metrics=["accuracy"]) classifier.fit(x_train, y_train, batch_size=10, nb_epoch=100) \$ ▶ OUTLINE classifier.save("churn ann.hdf5") Python 3.7.2 64-bit 🐼 8 🛦 9 -- NORMAL -- 🚱 🛯 1.1 hrs 🛛 🔔

Visual Studio Code

William Harrell LUG@NC State March 20, 2019

Program goes here :)

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) Q ≫ ⊗ E # W	 SESSION DETAILS Participants (0) Invite participants Shared Servers (0) Share server Shared Terminals (1) bash (Read-only) Chat Channel Audio Call Start audio call 	<pre>25 X - X[., +.] 26 27 # split data into a training set and a test set 28 from sklearn.model_selection import train_test_split 29 # test_size: percentage of data to use for test set 30 # random_state: seed used for random selectior 31 X_train, x_test, y_train, y_test = train_test_split(x, y, test_size=0.2, random_state=0) 32 33 # feature scaling: makes computation less intense and "ensures that just because some features a main predictor"</pre>		1 1563460 2 1564731 3 1561930 4 1570135 5 1573788 6 1557401 7 1559235 8 1565614 9 1579236 10 1559238 11 1576782	2 Hargrave 1 Hill 4 Onio 4 Boni 8 Mitchell 2 Chu 1 Bartlett 8 Obinna 5 He 9 H? 1 Bearce 3 Andrews 4 Kay	Credit Score Geography 619 France 608 Spain 609 France 699 France 645 Spain 645 Spain 645 Spain 645 France 646 France 647 France 648 France 659 France 649 France 645 Spain 647 France 648 France 649 Spain 649 France	Cender V Female Female Female Female Male Male Male Male Male Female Female Female			
	 CONTACTS Recent contacts (1) SyberBorks Suggested contacts (0) Invite participants 	<pre>34 from sklearn.preprocessing import StandardScaler 35 sc = StandardScaler() 36 x_train = sc.fit_transform(x_train) 37 x_test = sc.transform(x_test) 38 39 import json 40 with open("transform.json", "w") as f: 41 json.dump(sc.get_params(), f) 42 PROBLEMS 20 OUTPUT DEBUG CONSOLE TERMINAL 4 \$ single_prediction.py 3 O Unable to import 'keras' pylint(import-error) [1, 1] A unresolved import 'keras' pylint(import-error) [1, 1] A 'keras' used before definition Python(unresolved-import) [1, 8] A 'keras' used before definition Python(use-before-def) [4, 14] * Tain_an.py (17)</pre>		17 1573745 18 1578821 19 1566150 20 1556898 21 155765	6 Goforth 2 Romeo 8 Henderson 7 Muldrow	635Spain616Germany653Germany549Spain587Spain726France732France636Spain	Female Ny Male Sunday, March 10 Female Female Female Female Female Female		å ∂ ^ ×	×
*	 HELP Tweet us your feedback Report a problem More Info 	 Unable to import 'pandas' pylint(import-error) [3, 1] Unable to import 'sklearn.preprocessing' pylint(import-error) [14, Unable to import 'sklearn.model_selection' pylint(import-error) [2] Unable to import 'sklearn.preprocessing' pylint(import-error) [34, Unable to import 'sklearn.preprocessing' pylint(import-error) [34, Unable to import 'keras' pylint(import-error) [44, 1] Unable to import 'keras.models' pylint(import-error) [46, 1] Unable to import 'keras.layers' pylint(import-error) [46, 1] Unable to import 'sklearn.metrics' pylint(import-error) [85, 1] A unresolved import 'pandas' Python(unresolved-import) [3, 8] 'pd' used before definition Python(use-before-def) [8, 11] A unresolved import 'sklearn.preprocessing' Python(unresolved-import) a unresolved import 'sklearn.preprocessing' Python(unresolved-im	8, 1] 1] bort) [14, 6] nport) [28, 6							

Overview

- Written with TypeScript and Electron by Microsoft
- •MIT Licensed
- Built-in support for TypeScript, JavaScript, and Node applications
- Configured through JSON
- •Easily upgraded with extensions to build the IDE of your dreams for whatever language your heart desires

Microsoft / vscode								
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VS Code vs Atom

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	46 from keras.layers import Der	H							
	<pre>49 classifier = Sequential() #</pre>								
	56 classifier.add(Dense(6, inp 57 # add another hidden layer)								
	58 classifier.add(Dense(6, ini								
	61 classifier.add(bense(1, 202 c)								
		how well the network has been fit to the data "adam", loss="binary_crossentropy", metrics"							
	67 Classifier.compile(optimize		-[accuracy])						
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VS Code 🔟	Atom 🚳
Developed by Microsoft	Developed by GitHub Microsoft
Lightweight out of the box, but faster	Large number of default packages, almost every component is a package
Native support for TS, JS and Node	Native support for very large number of languages
Decent Git support	Excellent GitHub (and Git) support

Command Palette (demo)

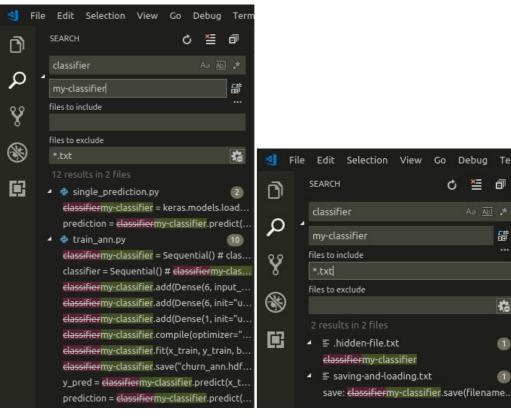
- •Easily access every possible action with Ctrl+Shift+P
- •Type what you want to do instead of having to memorize keyboard shortcuts
- Memorize keyboard shortcuts anyway because it shows you the shortcut associated with an action
 Undo stops created before executing commands that create edits
- •Extensions can add to the command palette; not limited to built-in functionality

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n Help: Welcome	
lč Code Time: Dashboard	
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Preferences: Open Keyboard Shortcuts	Ctrl + K Ctrl + S
View: Maximize Editor Group and Hide Sidebar	Shift + Alt + W
Help: Hide Interface Overview	Escape
Extensions: Show Disabled Extensions	
, File: New File	
Add Cursor Above	Shift + Alt + UpArrow other commands
Add Cursor Below	Shift + Alt + DownArrow
Add Cursors To Bottom	
Add Cursors to Line Ends	Shift + Alt + 1
Add Cursors To Top	

Find and Replace (demo)

- Search for a phrase across entire workspace
- Get a list of all occurrences; replace individually or all
- Supports regex

 Auto ignore .gitignored and pre-configured patterns in settings



Searches across entire workspace by default

Explicit includes only search those includes

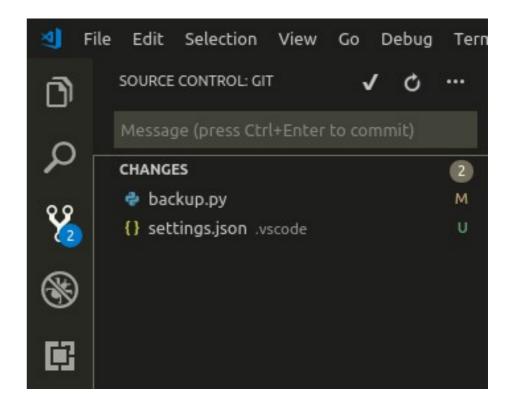
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Source Control (demo)

- •Simple but powerful Git interface
- •List all uncommitted changes
- •Work with staging area, remotes, tags, branches, stashes, conflicts either through sidebar or command palette
- •Additional SCM support through extensions



Side by Side Change View

•View highlighted changes to a file•Edit while viewing changes

124 d e	ef confirm(<i>question: str, default_yes: bool</i> =True, <i>default_no: bool</i> =False):	<pre>124 def confirm(question: str, default_yes: bool=True, default_no: bool=False):</pre>
125	<pre>if default_yes:</pre>	125 if default_yes:
126 -	<pre>response: str = input(question + " (Y/n)")</pre>	126 + response: <i>str</i> = input(question + " (Y/n) ")
127	elif default_no:	127 elif default_no:
128 -	<pre>response: str = input(question + " (y/N)")</pre>	128 + response: <i>str</i> = input(question + " (y/N) ")
129		129 else:
130 -	<pre>response: str = input(question + " (y/n)")</pre>	130 + response: <i>str</i> = input(question + " (y/n) ")
131	if response == "":	131 if response == "":
132	if default_yes:	132 if default_yes:
133	return True	133 return True
134	<pre>if default_no:</pre>	134 if default_no:
135	return False	135 return False
136	response = response.lower()	136 response = response.lower()
137	if response == "y":	137 if response == "y":
138	return True	138 return True
139	if response == "n":	139 if response == "n":
140	return False	140 return False
141	<pre>print("Invalid response")</pre>	141 print("Invalid response")
142	<pre>return confirm(question, default_yes, default_no)</pre>	<pre>142 return confirm(question, default_yes, default_no)</pre>

Debugging

- •Supports breakpoints, stepping actions, variable and expression watch, call stack analysis and debugging console
- •Built-in support for Node. Other languages supported through extensions and system packages (e.g. C++ through extension and gdb)
- •Debug session configuration (e.g. executable path, build commands) through automatically generated launch.json file

Debugging

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'U'	▲ VARIABLES	277 ifname == "main":	
Q ≫ ⊗ ∎	<pre>+ Locals > ZipFile: <class 'zipfile.zipfile<br="">> backup_dir: <function backup_dir<br="">> conf: {'current-differential-bac conf_path: './conf.toml' > confirm: <function 0x<br="" at="" confirm="">> copy: <function 0x7fe5a<br="" at="" copy2="">> datetime: <module 'datetime'="" fro<br="">> differential_backup: <function d<br="">> differential_backup: <function f<br="">> differential_backup: <function ful_back<br="">> gen_config_file: <function gen_c<br="">> hashlib: <module 'hashlib'="" from<br="">> init_logger: <function init_logg<br="">init_time: '03-12-2019 Tue 15-39 > is_ignored: <function is_ignored<br="">> item_from_path: <function item_f<br="">> watch </function></function></function></module></function></function></function></function></module></function></function></function></class></pre>	<pre>2// iiindet ==</pre>	
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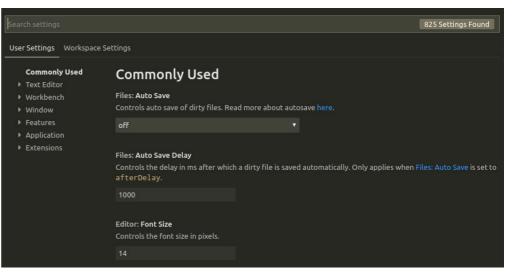
Configuration (demo)

•Configuration is stored in JSON files, but a GUI can also be used to easily edit settings

•Configurations follow a hierarchy:

•Default settings are overridden by user settings

•User settings are overridden by workspace settings (which are saved in workspace files)



home ▶ \	villiam 🕨 .config 🕨 Code 🕨 User 🕨 🚺 settings.json 🕨
	{
	"gitlens.advanced.messages": {
	"suppressShowKeyBindingsNotice": true
	},
	"gitlens.currentLine.enabled": false,
	"gitlens.hovers.currentLine.over": "line",
	<i>"editor.wordWrap"</i> : "on",
	"window.zoomLevel": 0,
	"window.titleBarStyle": "custom",
	"workbench.colorTheme": "Monokai",
	"workbench.startupEditor": "welcomePage",
12	"python.jediEnabled": false,
13	"editor.suggestSelection": "first",
14	"vsintellicode.modify.editor.suggestSelection":
	"automaticallyOverrodeDefaultValue",
15	"workbench.statusBar.feedback.visible": false,
	"breadcrumbs.enabled": true,
17	"fileheader.authorName": "William Harrell"
18	}

Extensions (demo)

•Extensions are created using three main components

- •Activation Events: Definitions of when the extension should be activated
- •Contribution Points: Descriptions of what exactly the extension adds to VS Code
- •VS Code API: Extensive JS API for interacting with the editor

•Being heavily integrated with Node, extensions can use npm packages as dependencies which will be installed along with the package

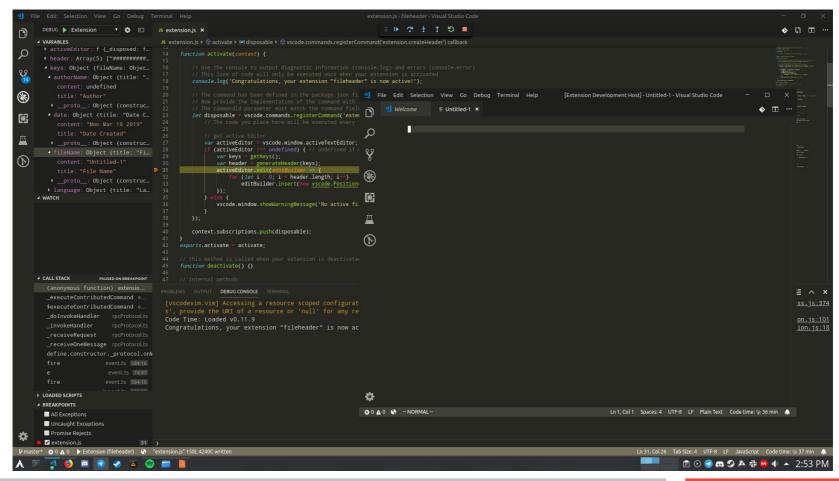
Extension Generator

An extension generator exists for Yeoman to make starting new extensions easy

william@arch-y260:	~/Desktop\$ yo code	
· [(0)], [Welcome to the Visual Studio Code Extension generator!	
/A\ / ~ ,,, /		
<pre>? What's the name of ? What's the ident ? What's the descr ? Enable JavaScrip ? Initialize a git</pre>	of your extension? filehea ifier of your extension? f iption of your extension? t type checking in 'jsconf	ileheader Inserts metadata header at beginning of file

Debugging Extensions (demo)

Extensions can be debugged while they run in another instance of VS Code



Code Time (demo)

Tracks user statistics

- •Time spent coding
- Characters entered
- •Language use
- Projects

•Syncs across machines

×1 I	File Edit	Selection View Go Debug Terminal Help CodeTime.txt - smileforthecam	ara (Workspace) - Visual Studio	– 🗆 X
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00		Today (Mon, Mar 18th)		
Ŷ		Hours coded today : 37 min 90-day avg : 0 min		a second the
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8		Yesterday (Sun, Mar 17th)		
6 27				-3 10.
Ē		Hours coded : 1.88 Lines of code added : 94		iller i
\sim		Lines of code deleted : 29		
(b)		Characters added : 2,135		
\sim		Characters deleted : 614 Total keystrokes : 2,836		
5		Total keystrokes : 2,836 KPM : 25.10		
Ę,		Live share : 0 min		
		Top language : jade		
		Last week (Sun, Mar 10th - Sat, Mar 16th)		
		Hours coded : 3.93		
		Lines of code added : 270		
		Lines of code deleted : 65		
		Characters added : 11,402		
		Characters deleted : 2,954		
		Total keystrokes : 14,609		
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Discord Presence

•Show off to all of your gamer friends

•Shows language, filename, workspace, and time elapsed

•15s delay in file changes due to Discord's policies



Excel Viewer

Preview Excel or CSV data Sort by columns

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	E Churn M	lodellina.csv								
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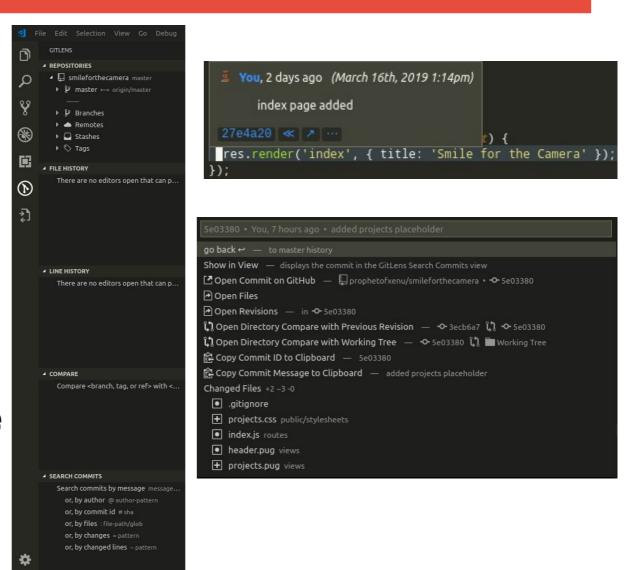
Git History

•Explore history of a Git project

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GitLens (demo)

- •"Supercharge" VS Code's Git functionalities
- In-editor commit details
- •Numerous blame annotations
- Highly configurable



Live Share (demo)

- Collaborate with other users
- Only one user needs to have project files
- •Share editors, terminals, and server applications
- Chat through text or voice

sftp (demo)

•Easily sync between local folder and a remote server using sftp

•Sync whole folders or individual files

•Auto-sync on local change

>sftp	
SFTP: Open SSH in Terminal	
SFTP: Upload Active File	
SFTP: Sync Local -> Remote	
SFTP: Config	
SFTP: List	
SFTP: Diff Active File with Remote	
SFTP: Cancel All Transfers	
SFTP: Download Active File	other commands
SFTP: Download Active Folder	
SFTP: Download Project	
SFTP: List Active Folder	
SFTP: List All	
SFTP: Set Profile	
SFTP: Sync Both Directions	
SFTP: Sync Remote -> Local	
SFTP: Upload Active Folder	
SFTP: Upload Project	

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	{
2	"name": "neon: xenu/smileforthecamera",
3	"host": "smileforthe.camera",
4	"protocol": "sftp",
5	"port": 22,
6	"username": "xenu",
7	"remotePath": "/home/xenu/smileforthecamera",
8	"uploadOnSave": true
9	}

Vim (demo)

Use Vim motions in VS Code

- •Movement
- Insert Mode
- •Visual Mode
- •Search and Replace
- •Range Selection

•Does not support vimscript although many popular Vim extensions are emulate

code-server

- •Fork of VS Code that can be run in a web browser
- •Run on a server to access your IDE from any web browser
- Supports extensions

