



WASTC 2020 Faculty Development Weeks

## Pythonator III – Artificial Intelligence: Rise of the Machine Languages

Dates: Fully Online, June 15-19, 2020

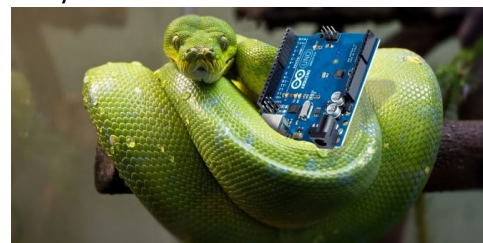
Time: 8 –11 am and 12 –3 pm Monday –Friday [extra tutoring session 3 –4pm]

### Workshop Overview:

Do terms like Artificial Intelligence (AI), Machine Language (ML), and Big Data interest, yet maybe confuse you? Would you like to know how to practically apply them to do things like Intent Based Networking (Cisco DevNet), Classification and Deep Learning (AWS DeepLens and SageMaker), and Unsupervised Machine Learning. Maybe you have heard Python is “the language” to know, but don’t know why. Come learn what they are about and how courses are being built for community colleges. No prior Python experience required but having some experience with Python and knowledge of programming in general is recommended. The full semester course is offered to students who normally have had an introductory programming course, a database management (SQL) course and ideally a business intelligence course and/or data-warehousing course.

### Agenda:

- Learn about the concepts of ML – Classification, Regression, Clustering – ½ day
- Access to environments AWS Educate, Cisco DevNet, Oracle Cloud Academy, (possibly Azure) - ½ day
- Review of Python, data systems and learn about NumPy, Panda, Anaconda, Jupyter, Scikit-learn, matplotlib - 1 day
- Data Visualization – Plotting, Charts, Tables, Features and Feature extraction, Deep Learning and Tensorflow – ½ day
- Intro to Statistics and Performance Metrics – K-Means vs. KNN, Linear vs. Logistic Regression, Neural and Deep Neural Nets – ½ day
- ML applications: Malware detection, Breast Cancer diagnostics, Virus propagation, Helping Visually Impaired to “see”, etc. – 1 day
- Intro to Unsupervised Machine Learning - ½ day



**Instructor: Matthew Cloud** As an undergraduate at Texas A & M, Matthew created a company, Cloud Technologies, building systems ranging from Positron Emission Tomography calibration to logistics systems for the 2nd layer of the US network in the late 90’s, to turning in 2008 towards understanding the network of the human brain as a biomedical engineer (MS) to help those with Stroke, TBI, pain, PTSD or ADHD recover. For four years prior to his current role, he was Director of a DOL grant defining the IT Pathways over the School of IT at the State level of Ivy Tech CC of Indiana with over 22,000 IT students and 150 faculty. Currently, as the IT Department Chair for the Ivy Tech Lake County campus he also serves as State Vice-Chair for CS, IN K12 IT and CS DOE Committees and Governors Cybersecurity Council, Global Advisor for CISCO Academy and NetAcad 4 Diverse Abilities. He also

took ballroom dancing in college.

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