Mikel Polena

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EDUCATION

Bachelor of Science in Computer Engineering, Illinois Institute of Technology 2013 – 2016

COURSEWORK

Digital Circuit Design	Discrete Math and Algorithms	Computer Architecture Design
Computer Networks	Inter-Professional Projects	Microcomputers
Signals and Systems	Systems Programming	VLSI Design
Operating Systems	Modern Physics	Database Organization

SKILLS

Languages:	Python, C, C++, SQL, JavaScript, Clojure
Tools:	Selenium, REDCap, Git, vim, sed, awk, tmux, venv, VS Code, Jupyter, Power BI
Python libraries:	Numpy, Pandas, Scikit-Learn, Keras, Pytorch, OpenCV, Tensorflow and others
C++ libraries:	STL, Boost, OpenMP
Algorithms:	Backpropagation, Linear and Logistic Regression, Time Series Analysis
Databases:	PostGRES, Oracle, SQL Server
Github:	https://github.com/mpolena

EXPERIENCE

Python Developer / Data Analyst – *CCTS BioInformatics Core, UIC Chicago, IL* Feb 2020 – Present

- Perform clinical data extraction from EPIC and Cerner EHR systems to assist stakeholders in various research projects/studies that provide an improved understanding of healthcare phenomena. (medication effects, cohort studies, etc.)
- Build and maintain common data models that enable multi-institutional research. (PCORI, OMOP, CAPRICORN)
- Develop, perform and maintain ETL processes used for building clinical data models containing millions of rows for a variety of clinical domains such as Labs, Diagnosis, Medications, Vitals etc. by using a combination of skills including python, SQL, C, and algorithmic problem solving in a diverse set of computing environments.
- Contribute on projects and scientific research papers by providing insights and statistical analysis on use of computational, machine learning and deep learning models that seek to improve patient outcomes.
- Design and maintain an ETL process for a common data model that facilitates COVID-19 research.

Python Developer / Data Analyst – *Shirley Ryan AbilityLab - Chicago, IL* May 2019 – Feb 2020

- Consolidated multiple complex data sets in order to create data repositories that serve as the foundation for advanced analytic models used throughout the institution.
- Designed tools that automated data collection and eliminated manual data processes.
- Used multiple APIs to successfully automate data migration from different sources into REDCap, a secure HIPAA compliant web application used for building and managing online surveys and databases.
- Acted as Interim REDCap Supervisor/Administrator overseeing user access requests, approval of in production project changes and addressing ad-hoc implementation challenges.
- Doubled number of REDCap users by migrating two Clinical Neuroscience Research Registries, improving data processes and providing better usability and data consistency.

- Uncovered trends, patterns, correlations and other relationships in medical health records to deliver actionable insights that improve patient care.
- Collaborated with stakeholders to tune models and interpret outcomes in order to make them suitable for decision support at senior and executive management levels.
- Performed ad-hoc analysis on patient satisfaction, operations management and safety related events.
- Designed complicated SQL queries that continually pull data from the Enterprise Data Warehouse and present it in dashboards that provide better visualization and assist in data driven decisions.

ACADEMIC PROJECTS

STEPS – Solutions That Enable Phone Security was a multilayer security solution concept that protected users in case of smart device theft. STEPS was developed in collaboration with four other students as an Inter-professional academic project and was selected among twenty other projects to be presented in front of the **FCC Technical Advisory Council meeting Dec. 2014 - Washington D.C.**

DATA SCIENCE & MACHINE LEARNING BACKGROUND

Coursera	**Certification/Completion Date**
• Python Curriculum (four courses) – University of Michigan	March 2017
• Machine Learning – Stanford University, Prof. Andrew Ng	June 2018
• DeepLearning.ai – Stanford University, Prof. Andrew Ng	
○ Course 1: Neural Networks and Deep Learning	August 2018
○ Course 2: Structuring Machine Learning Projects	August 2018
○ Course 3: Improving DNNs: Hyperparameter Tuning, Regularization and Optimization	August 2018
○ Course 4: Convolutional Neural Networks	September 2018
○ Course 5: Sequence Models	September 2018
• AI for Medical Diagnosis	March 2020
NVIDIA Deep Learning Institute	
• Deep Learning Fundamentals for Computer Vision	August 2018
• Modeling Time Series Data with RNNs in Keras	April 2019
Intel AI Academy	
• Deep Learning 501	September 2018
• Time Series Analysis	February 2019
LinkedIn Learning	
• Building Tools with Python	April 2020
• Elasticsearch Essential Training	June 2020
• GraphQL Essential Training	July 2020

**References available upon request*