

Analytics Fundamentals

- [Relational Algebra \(basic\)](#)
- [Structured Query Language \(SQL\) \(proficient\)](#)
- [Multidimensional Data Modeling \(proficient\)](#)
- [Online Analytical Processing \(proficient\)](#)
- [Extraction, Transformation, Load \(proficient\)](#)
- [Linear Algebra-Matrix/Vector Operations \(basic\)](#)
- [Extensible Markup Language \(basic\)](#)
- [JavaScript Object Notation \(basic\)](#)
- [Comma Separated Values Files \(proficient\)](#)
- [Graph Theory \(basic\)](#)

Databases

- [Cassandra \(formal training\)](#)
- [Ontotext GraphDB \(used\)](#)
- [MongoDB \(formal training\)](#)
- [MySQL \(used\)](#)
- [Neo4j \(evaluated\)](#)
- [Oracle \(used\)](#)
- [SQL Server \(used\)](#)
- [Stardog \(used\)](#)
- [Teradata \(evaluated very lightly\)](#)
- [Virtuoso \(evaluated\)](#)

Development Environments

- [Anaconda \(evaluated\)](#)
- [Databricks \(used\)](#)
- [Eclipse \(used\)](#)
- [Enthought Canopy \(evaluated\)](#)
- [IDLE \(evaluated\)](#)
- [iPython interpreter \(evaluated\)](#)
- [iPython notebook\(used\)](#)
- [Komodo \(evaluated\)](#)
- [NetBeans \(used\)](#)
- [Oracle SQL Developer \(used\)](#)
- [Oracle Applications \(used\)](#)
- [Pycharm \(used\)](#)
- [Revolution R \(used\)](#)
- [R Studio \(used\)](#)

Development Environments (continued)

- [Spyder \(used\)](#)
- [Stanford Protege \(used\)](#)
- [Teradata Studio Express \(evaluated very lightly\)](#)
- [TopBraid Composer \(used\)](#)
- [Visual Studio \(evaluated\)](#)
- [Web Storm \(used\)](#)
- [Wing \(evaluated\)](#)
- [WinPython \(used\)](#)

Development Processes

- [Quality \(e.g., security, reliability, usability\) Assurance \(basic\)](#)
- [User Interface Design Principles \(proficient\)](#)
- [Functional Requirements \(expert\)](#)
- Listening (proficient, but one can always work on this...)
- [System Requirements \(basic\)](#)
- [Nonfunctional Requirements \(proficient\)](#)
- [Tracing Requirements \(proficient\)](#)
- [Software Design Patterns \(rudimentary\)](#)
- [UML Graphical Modeling \(expert\)](#)
- [Software Testing \(basic\)](#)
- [IEEE Software Engineering Standards \(proficient\)](#)

Drag and Drop Toolboxes

- [Cognos \(evaluated\)](#)
- [Informatica \(used\)](#)
- [Oracle Business Intelligence 11g \(evaluated\)](#)
- [Oracle Fusion/Essbase \(evaluated\)](#)
- [RapidMiner \(used/taught\)](#)
- [SAP Business ByDesign \(used/taught\)](#)
- [SAP Business Objects \(formal training/used\)](#)
- [SAP Crystal Reports \(used/taught\)](#)
- [SPSS \(used\)](#)
- [Tableau \(evaluated\)](#)
- Brio (absorbed by Hyperion then by Oracle) (used)
- Sequitur (defunct or absorbed, not sure)

Languages

- [C \(very, very long time ago\)](#)
- [C++ \(very long time ago\)](#)
- [Java \(basic\)](#)
- [JavaScript/CSS/HTML \(basic\)](#)
- [JSON \(basic\)](#)
- [Markdown \(basic\)](#)
- [Pandoc \(basic\)](#)
- [Python \(familiar\)](#)
- [OWL \(basic\)](#)
- [R \(proficient\)](#)
- [RDF \(basic\)](#)
- [Regular Expressions \(between basic and proficient\)](#)
- [Spark \(familiar\)](#)
- [SPARQL \(basic\)](#)
- [SQL \(proficient\)](#)
- [UML \(proficient\)](#)
- [XML \(basic\)](#)

Machine Learning Fundamentals

- [Classification \(basic\)](#)
- [Regression \(basic\)](#)
- [Resampling \(rudimentary\)](#)
- [Model Selection \(rudimentary\)](#)
- [Regularization \(rudimentary\)](#)
- [Non-linear Models \(rudimentary\)](#)
- [Tree-based Methods \(rudimentary\)](#)
- [Support Vector Machines \(rudimentary\)](#)
- [Clustering \(rudimentary\)](#)

Miscellaneous

- [Adobe Illustrator](#)
- [Photoshop \(used\)](#)
- [Altova XML Spy \(used\)](#)
- [Apache Jena \(Java API\)>\(used\)](#)
- [Apache Tomcat \(Web Server\)> \(used\)](#)
- [Bootstrap \(Web Framework\)> \(used\)](#)
- [Foundation \(Web Framework\)> \(used\)](#)

Miscellaneous (continued)

- [Google Apps \(used\)](#)
- [IBM Rational Software \(used\)](#)
- [Jack Intelligent Agents \(used\)](#)
- [Jadex Active Components \(Java API\) \(used\)](#)
- [Microsoft Project \(used\)](#)
- [Microsoft Visio \(used\)](#)
- [SharePoint \(used\)](#)
- [Access \(used\)](#)
- [OpenRDF Sesame \(Java API\)\(used\)](#)
- [Pellet \(lightly evaluated\)](#)
- [Pure \(Web Framework\)> \(used\)](#)
- [Research Cyc \(lightly evaluated\)](#)
- [WordNet \(used\)](#)
- [Verbnet \(used\)](#)
- [FrameNe \(used\)](#)
- [PropBank \(used\)](#)
- [LemonUBY \(Vocabularies\) \(used\)](#)
- [LSEG4 \(used\)](#)
- [Lexical Markup Framework](#)
- [isoCAT \(Grammars\) \(used\)](#)
- [CCAE](#)
- [Penn TreeBank](#)
- [British National Corpuses \(used\)](#)
- [Windows Movie Maker \(used\)](#)
- Open Source or Free Alternatives (proficient)

Programming Fundamentals

- [Input/Output \(proficient\)](#)
- [Control Flow \(proficient\)](#)
- [Classes \(basic\)](#)
- [Objects \(basic\)](#)
- [Functions \(proficient\)](#)
- [Methods \(proficient\)](#)
- [Dictionaries \(between basic and proficient\)](#)
- [Lists \(between basic and proficient\)](#)
- [Sets \(between basic and proficient\)](#)
- [Graphs \(between basic and proficient\)](#)
- [Iteration \(proficient\)](#)
- [Vectorization \(rudimentary\)](#)

Programming Fundamentals (continued)

- [Recursion \(basic\)](#)
- [Exception Handling \(rudimentary\)](#)
- [Lambda Expressions \(basic\)](#)
- [Map \(basic\)](#)
- [Reduce \(basic\)](#)
- [Closures \(rudimentary\)](#)
- [Search Algorithms \(rudimentary\)](#)

Programming (Statistics) Toolboxes

- [MATLAB \(evaluated\)](#)
- [Octave \(used\)](#)
- [Minitab \(used\)](#)
- [Python \(used\)](#)
- [R \(used\)](#)
- [Rattle \(learned\)](#)
- [Revolution R \(used\)](#)
- [SAS \(evaluated\)](#)
- [Stata \(used\)](#)

Programming Utilities

- [AWS Compute / Storage / Database \(using\)](#)
- [Heroku / Python / NodeJS \(using\)](#)
- [Cygwin \(used\)](#)
- [GitHub \(using\)](#)
- [JSFiddle](#)
- [CodePen \(used\)](#)
- [Maven \(evaluated\)](#)
- [Oracle Virtual Box \(used\)](#)
- [Putty \(used\)](#)
- [Regex101, Regexpal, Regexr, Pythex, \(using\)](#)
- [Rpubs \(using\)](#)
- [ShinyApps \(using\)](#)
- [Notepad++, Sublime, EmEditor, Nano, Gedit, etc. \(using\)](#)
- [Ubuntu Linux \(using\)](#)
- [Unix \(used\)](#)
- [VMWare \(evaluated\)](#)

Project Management

- [Reference for all items in this section](#)
- Risk Management (basic)
- Quality Management (basic)
- Scope (Requirements) Management (proficient)
- Time (Schedule) Management (basic)
- Cost (Budget) Management (basic)
- Employee Management (basic)
- Vendor Management (basic)
- Customer Management (basic)
- Interface with Software Engineering (expert)

Statistics Fundamentals

- [Reference for all items in this section](#)
- Descriptive Statistics (proficient)
- Distributions (basic)
- Probability Theory (proficient)
- Bayes Theorem (basic)
- Hypothesis Testing (between basic and proficient)
- Simple & Multiple Linear Regression (proficient)
- Oneway & Multifactor ANOVA (basic)
- Logistic & Ordinal Regression (proficient)
- Binomial Test (basic)
- Chi-square Contingency Tables (basic)
- Non-parametric Alternatives (proficient)

Python Packages

- [Reference for all items in this section](#)
- Beautiful Soup (used)
- Bottle (used)
- Core NLP (evaluated)
- iPython (used)
- Matplotlib (evaluated)
- NumPy (used)
- Pandas (used)
- PyMongo (used)
- pyR (evaluated)
- PySpark (used)
- Re (used)

Python Packages (continued)

- SciPy (used)
- NLTK (used)
- PyQt (used)

R Libraries

- [Reference for all items in this section](#)
- caret (used)
- ggplot2 (used)
- data.table (used)
- doBy (used)
- Hmisc (used)
- knitr (used)
- MASS (used)
- lattice (used)
- leaps (used)
- plyr (used)
- rCharts (used)
- regex (used)
- reshape2 (used)
- rPython (evaluated)

Training Approaches & Tools

- [Project-based Learning \(expert\)](#)
- [Problem-based Learning \(expert\)](#)
- [Case Based Learning \(expert\)](#)
- [Collaboration and Learning \(expert\)](#)
- [Technology and Learning \(expert\)](#)
- [Learning Outcomes \(proficient\)](#)
- [Learning Outcomes Assessment \(proficient\)](#)
- [Camtasia](#)
- [Audacity](#)
- [Adobe Creative Cloud \(used\)](#)
- [WebEx](#)
- [GoToMeeting](#)
- [Google Hangouts \(used\)](#)
- [PollEverywhere](#)
- [Socrative \(used\)](#)
- [Screencast](#)

Training Approaches & Tools (continued)

- [YouTube \(used\)](#)
- [Articulate](#)
- [Captivate](#)
- [Lectora \(evaluated\)](#)
- WebCT (now part of Blackboard)
- [Sakai](#)
- [Blackboard](#)
- [Moodle \(used\)](#)
- [Simulations](#)
- [Virtual Worlds](#)
- [Augmented Reality\(used\)](#)