

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 \(basic\)](#)

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 \(proficient\)](#)
- [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 \(rudimentary\)](#)

Programming Fundamentals

- Classes (basic)
- Closures (rudimentary)
- Control Flow (proficient)
- Dictionaries (between basic and proficient)
- Exception Handling (rudimentary)
- Functions (proficient)
- Graphs (between basic and proficient)
- Input / Output (proficient)
- Iteration (proficient)
- Lambda Expressions (basic)
- Lists (between basic and proficient)
- Map (basic)
- Methods (proficient)
- Objects (basic)
- Recursion (basic)
- Reduce (basic)
- Search Algorithms (rudimentary)
- Sets (between basic and proficient)
- Vectorization (rudimentary)

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)

Training Approaches

- [Project-based Learning \(expert\)](#)
- [Problem-based Learning \(expert\)](#)
- [Case Based Learning \(expert\)](#)
- [Collaboration and Learning \(expert\)](#)
- [Technology and Learning \(expert\)](#)
- [Learning Outcomes Development \(proficient\)](#)
- [Learning Outcomes Assessment \(proficient\)](#)