Carlos M. Cabrera

Data Engineer

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pointtonull
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Python expert with experience in Data Mining and Machine Learning.

Note: This is the academic version of this document.

Top Skills

Programming	**Python, C, JavaScript, Go, Rust, Haskell, Erlang**	Databases	**DynamoDB, MongoDB, PostgreSQL, MySQL**
Cloud	**AWS, Google**	API	**Chalice, Django, Flask, Tornado**
Scripting	**AWK, Sh/Bash, Sed, Perl**	Others	**Scripting, Git, RESTfull, Linux**

Professional Experience

2018–Present **Data Engineer**, *White Space*.
Architect and Developer of a Data platform for Finantial Market Research. Cloud Architect using AWS tools. Maintainer of C++/Python embedded libraries for CPU intensive operations.

2015–2017 **Data Engineer**, *Alert Logic*.
Lead Programmer in the creation of self-adapting system for monitoring and reporting on security leaks. Creationg of Reputation algotirthm. Lead developer for Watchlist project. Main responsible for development of Universal Threats Database with Serverless architecture.

2014–2015 **Data Analyst**, *Alert Logic*.
Team Leader for team in charge of creation of parsing rules for high-performance natural language processor. Responsable of the creation of a Tooling effort and author of the first version of the tooling framework.

2012–2013 **Programmer – Researcher**, *Laser Optics Group*.
Python Multiplatform System for acquisition and reconstruction of digital holograms that integrates multiple Machine Learning algorithms that automates the entire process.

2010–2011 **Teacher**, *National University of Salta*.
Extension courses: RESCD-EXA: 741/2011, RESCD-EXA:495/2010 and RESCD-EXA: 316/2011. GNU/Linux Debian Advanced Administration, System and Network administration, Introduction to scripting (Sh, Python, Perl, AWK) and services securing.

2011 **Programmer**, *S60Salesman*.
Point of Sales System for Traveling Salesman written on Python for Symbian Smartphones.

2011 **Development Leader**, *Fiscal3G*.
System to control Massive Distributed teams. Can handle disconnection using SMS as secondary channel. Leader of team of 3.

2010–2011 **Systems Development Manager**, *IANUX Solutions*.
Planning and management of development projects. Survey, analysis and design of systems. Staff in charge 2. We have implemented solutions for different clients using Django and TurboGears.

2009 **Programmer**, *Tokuah*.
Design and implementation of an educational game using Python/Pygame.

2008–2009 **Analyst / Programmer – Researcher**, *Argentina National Gendarmerie*.

2008 **Analyst / Programmer**, *COMPTI*.

2007–2008 **Programmer**, *Deliberative Council of Salta*, Salta.

2006 **Programmer**, *Bombito*.

Higher Education

2008–2012 **System Analist**, *"Dr. Facundo de Zuviría"*, Master.

Master Thesis

Title *Agile Development of Scientific Applications*

Supervisor PhD. Andrea Carolina Monaldi

Description Analyzes the use of agile methodologies in software engineering for the field of scientific research. We made a suite for making and processing Digital Holograms on top of the Python Scientific stack applying the Crystal Clear agile techniques. `http://github.com/pointtonull/golsoft`

Academic works

Publications

2012 **Obtaining synthetic phase maps in digital holographic microscopy using two wavelengths** , *Monaldi A C, Romero G G, Alanís E E, Cabrera C M*, 97 National Meeting of the Physical Association of Argentina, 2012.

2012 **Automatic compensation of phase aberration in digital holographic microscopy off-axis configuration** , *Monaldi A C, Romero G G, Cabrera C M* , 97 National Meeting of the Physical Association of Argentina, 2012.

2012 **Filter performance evaluation and implementation of an autofocus method in reconstruction of holograms in digital holographic microscopy** , *Cabrera C M, Monaldi A C, Romero G G*, 97 National Meeting of the Physical Association of Argentina, 2012.

Named Lectures

2010 **'Programming is fun'**, *Fifth Conferences of Free Software of Salta*, National University of Salta.
About the importance of good programming practices. Introducing Pomodoro and other time management techniques. The value of frameworks.

2010 **'The Development in the Free Software World'**, *Software Freedom Day*, Catholic University of Salta.
Introductory talk and motivational directed to beginning programmers.

2009 **'from 0 to Python in 30 minutes'**, *Latin American Free Software InstallFest*, National University of Salta.
Brief presentation of philosophy and syntax of Python to demonstrate it takes very few time to start coding in Python.

2008 **'from 0 to Python in 45 minutes'**, *Latin American Free Software InstallFest*, National University of Salta.
Brief presentation of philosophy and syntax of Python to demonstrate it takes very few time to start coding in Python. Include a general description of paradigms in Python.

2007 **Disertación sobre 'Distribuciones GNU/Linux'**, *Festival Latinoamericano de Software Libre*, Universidad Nacional de Salta.

2007 **Series of talks: 'Object Oriented Programming in Python'**, *Facultad de Ciencias Exactas de la Universidad Nacional de Salta*.
Topics: concepts of objects, interpreter architecture, first-class objects, functions as objects (callables), classes declaration syntax, inheritance operations, performance and style considerations.

Conferences Organized or Co-Organized

2011 **Regional Coordinator**, *National University of Salta*, Latin American Free Software InstallFest.

2007–2011 **Organization**, *National University of Salta*, Annual Conferences of Free Software of Salta..

2010 **Organization**, *Catholic University of Salta*, Software Freedom Day..

2008–2010 **Organization**, *National University of Salta*, Latin American Free Software InstallFest..

Selected Open Source Projects

GOLSoft, *Digital Holography Framework designed to train Deep Learning algorithms.*

VimRenamer, *Vim extension to bulk-edit tons of files with some few key-strokes.*

PyUnwrap, *A efficient Ansi C wave unwrapper with python bindings.*

Complementary Formation

2018 **Advanced Styling with Responsive Design**, *License ELDM5LRGTK3H* , Michigan University, *Score 92.3%.*

Topics include: Fluid Measurements, Pixel to Em, Dynamic change, relative and absolute, Media Queries, Fluid Measurements and Media Queries, Wire Frames, Breakpoints, Responsive Navigation, Media Queries and breakpoints, Twitter Bootstrap 4 (Breakpoints, Grid System, Navigation, Standards vs Convenience, Responsive Images, Tables, Advanced Navigation)

2018 **Structuring Machine Learning Projects**, *License 6QNQ9XWER98A* , Michigan University, *Score 86.7%.*

Topics include: ML Strategy, Comparing to human-level performance, Carrying out error analysis, Cleaning up incorrectly labeled data, Iterative improvement, Mismatched training and dev/test set, Training and testing on different distributions, Bias and Variance with mismatched data distributions, Addressing data mismatch, Learning from multiple tasks, Transfer learning, Multi-task learning, End-to-end deep learning, Case: Flight simulator, Case: Bird recognition, Case: Autonomous driving.

2018 **Interactivity with JavaScript**, *License LZ74JEGGWGS2* , University of Michigan, *Score 98.7%.*

Topics include: DOM, DOM with OOP, Output, Variables, Data Types, Operators and Expressions, CodePen, Debugging, Functions, Code Placement and organization, Events and Functions, "this", Arrays and Looping, Advanced Coding Techniques, JavaScript Iteration, Flow Of Control, Advanced Conditionals, Common Errors, Validating Form Data, Forms (Validation, Checkboxes and Radio Buttons, Using Forms on Your Site), JQuery, Autocomplete with JavaScript.

2018 **Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization**, *License X932C9K84YAK* , deeplearning.ai, *Score 96.1%*.

Topics include: Train / Dev / Test sets Bias / Variance Basic Recipe for ML Regularization Why? (Dropout, Other methods) Normalizing inputs Vanishing / Exploding gradients Weight Initialization Numerical approximation of gradients Gradient checking Initialization Regularization Optimization algorithms Mini-batch gradient descent Exponentially weighted averages Bias correction Gradient descent with momentum RMSprop Adam optimization algorithm Learning rate decay The problem of local optima Optimization algorithms Hyperparameter tuning, Batch Normalization and Programming Frameworks Tuning process Using an appropriate scale to pick hyperparameters Pandas vs. Caviar Normalizing activations in a network Fitting Batch Norm into a neural network Batch Norm at test time Softmax Regression Training a softmax classifier TensorFlow

2018 **Learning GraphQL**, *LI Learning*, LinkedIn, *Score 100%*.

Topics include: GraphiQL and the GitHub API, GraphQL Queries, Understanding Schemas, Query the __schema, Handling Data (Aliases, Fragments, Nested fields, Connections, Pagination), Operations and Variables (Operation names, variable definitions, mutations).

2018 **Machine Learning & AI Foundations: Value Estimations**, *LI Learning*, LinkedIn, *Score 100%*.

Topics include: Supervised machine learning for value prediction, Find the best weights automatically, An Overview of Building a Machine Learning System, Introduction to NumPy, scikit-learn, and pandas, Gradient boosting, Training Data, Feature engineering, Feature selection, Coding Our System, Measure accuracy, Overfitting and underfitting.

2018 **Python for Data Science Essential Training**, *LI Learning*, LinkedIn, *Score 100%*.

Topics include: Jupyter, Data Munging, Data Visualization, Math and Statistics, NumPy arithmetic, Dimensionality Reduction, Explanatory factor analysis, Principal component analysis (PCA), Outlier Analysis, Extreme value analysis using univariate methods, Multivariate analysis for outlier detection, Cluster Analysis, Network Analysis with NetworkX, Basic Algorithmic Learning, Web-based Data Visualizations with Plotly, Web Scraping with Beautiful Soup.

2018 **Introduction to HTML5**, *License LZ74JEGGWGS2* , University of Michigan, *Score 95.7%*.

Topics include: The Evolution of HTML, Page Requests, Browsers, Editors, The Document Object Model [DOM], HTML5 Tags and Syntax, Semantic Tags, Template Page, Images, Hyperlinks, Multimedia, Tables, Useful Tags, Accessibility, Validation, Hosting, cPanel, Using SFTP.

2018 **Amazon Web Services: Monitoring and Metrics**, *LI Learning*, LinkedIn, *Score 100%*.

Topics include: Monitoring Tools, Understand CloudWatch, Extend CloudWatch, Explore AWS Config, Add Managed Config Rules, Beyond Traditional Monitoring, Understand AWS logging, Understand Elasticsearch, Application performance management, Link CloudWatch and Lambda.

2018 **Introduction to CSS3**, *License NDM4GGJPEETK* , University of Michigan, *Score 97.9%.*

Topics include: Cascading Style Sheets, Display and Visibility, Styling Syntax and Theory, Box Model, Advanced Selectors, Shorthand rules, Browser Capabilites, Headings, Homework Two Description, Advanced Style (Psuedo-classes, Pseudo-elements, Transitions, and Positioning), Transforms, Animation, Tables, Navigation Menus, Accessible Navigation, Accessibility of Headings,

2018 **Learning Cloud Computing: Monitoring and Operations**, *LI Learning*, LinkedIn, *Score 100%.*

Topics include: Cloud health monitoring, Cloud performance monitoring, Cloud security monitoring, Cloud governance monitoring, Short-term cloud monitoring analytics, Long-term cloud monitoring analytics, Cloud cost monitoring, AWS CloudWatch, Datadog, Librato CloudWatch, Cloud Cruiser, Microsoft cloud monitoring, Rackspace cloud monitoring, Other players, Understanding requirements, Creating plan, Selecting tools.

2018 **Neural Networks and Deep Learning**, *License 3T7YRLSDSU6A3* , deeplearning.ai, *Score 100%.*

Topics include: Introduction to deep learning, Supervised Learning with Neural Networks, Neural Networks Basics, Binary Classification, Logistic Regression, Logistic Regression Cost Function, Gradient Descent, Derivatives, Computation graph, Derivatives with a Computation Graph, Logistic Regression Gradient Descent, Vectorization, Broadcasting in Python, Jupyter/iPython Notebooks, Logistic Regression with a Neural Network mindset, Shallow neural networks, Neural Network Representation, Computing a Neural Network's Output, Vectorizing across multiple examples, Explanation for Vectorized Implementation, Activation functions, Derivatives of activation functions, Gradient descent for Neural Networks, Backpropagation intuition, Random Initialization, Planar data classification with a hidden layer, Shallow Neural Networks, Deep Neural Networks, Deep L-layer neural network, Forward Propagation, Deep representations?, Building blocks of deep neural networks, Forward and Backward Propagation, Parameters vs Hyperparameters, Applications.

2017 **JavaScript Essential**, *LI Learning*, LinkedIn, *Score 100%.*

Topics include: Tools for JS Development, Working with data, Arrays, Functions and Objects, Variable scope, ES2015, Object constructors, DOM Manipulation, querySelector methods, Use CSS with JS, Events, Debug JS, Linting, Minification.

2017 **Building Deep Learning Applications with Keras 2.0**, *LI Learning*, LinkedIn, *Score 100%.*

Topics include: Keras Overview, Setting Up, Creating a Neural Network in Keras, Training Models, Pre-Trained Models in Keras, Monitoring a Keras model with TensorBoardd, Using a trained Keras Model in Google Cloud.

2016 **CSSLP: Secure Software Implementation and Coding**, *Certified Secure Software Lifecycle Professinoal*, Skillsoft, *Score 100%.*

Topics include: Declarative versus programmatic security, OWASP and CWE, and some defense coding practices and controls, error handling, and session management. Essential secure coding techniques (versioning, peer-based code reviews, code analysis, and anti-tampering techniques).

2016 **AWS Business Professional**, *Training and Certification*, amazon.com, *Score 100%*.

Topics include: The AWS Business Professional training program provides participants with basic knowledge of AWS products and services. These online and instructor-led training modules help build the foundation to effectively leverage AWS solutions to customers. This course is intended for individuals responsible for articulating the business benefits of AWS services and how AWS solutions can help solve common business problems.

2012 **Neural Networks for Machine Learning**, *MOOC by Prof. Geoffrey Hinton*, Toronto University.

2012 **Social Network Analysis**, *MOOC by Prof. Lada Adamic*, Michigan University.

2012 **Machine Learning**, *MOOC by Prof. Andrew Ng*, Stanford University, *Score 100%*.

2012 **Model Thinking**, *MOOC by Prof. Scott E. Page - Ann Arbor*, Michigan University, .