

Ocampo, Nicolás Benjamín

PERSONAL DATA

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EDUCATION

Diplomatura en Ciencia de Datos, Aprendizaje Automático y sus Aplicaciones Córdoba, Argentina | Mar 2021 - Present

Facultad de Matemática, Astronomía, Física, y Computación, Universidad Nacional de Córdoba

Licenciatura en Ciencias de la Computación Córdoba, Argentina | Jan 2017, Present

Facultad de Matemática, Astronomía, Física, y Computación, Universidad Nacional de Córdoba

🎓 Overall mark: 9.58 over 10

This degree is considered equivalent to a Master in Computer Science degree. The study plan has a duration of 5 years. This Master's degree will also be obtained by the end of 2021. Topic of the thesis: Using Word Embeddings for Heuristic Grounding in Classical Planning.

Analista en Computación Córdoba, Argentina | Jan 2017 - Dec 2019

Facultad de Matemática, Astronomía, Física, y Computación, Universidad Nacional de Córdoba

🎓 Overall mark: 9.56 over 10.

The study plan for this certification has a duration of 3 years.

Escuela Secundaria Salta, Argentina Jan 2011 - Dec 2016

Instituto de Educación Media Dr. Arturo Oñativia

🎓 Overall mark: 9.22 over 10.

COURSES I HAVE DONE, POSSIBLY RELEVANT TO THIS POSITION

All the subjects I passed with mark 10 over 10 in the Facultad de Matemática, Astronomía, Física, y Computación (FaMAF), Universidad Nacional de Córdoba

Discrete Mathematics II. Graph algorithms. Maximum flow. Cyclic codes. P and NP problems.

Parallel Computing. Program optimization techniques.

Neural Networks. Dynamic systems. Modeling of real and artificial neurons.

Probability and Statistics. Data analysis and visualization. Random variables. Statistical hypothesis testing.

Models and Simulation. Random numbers. Generation of random variables. simulation of stochastic processes.

Mathematical Analysis I. Continuous functions. Extreme values of continuous functions in closed intervals. Derivatives. Relative extremes. L'Hopital's rule. Successive derivatives. Applications to sketch functions. Notions of antiderivatives.

Mathematical Analysis II. Integration methods, Successions and subsuccessions. Numerical series. Power series. Taylor Series and polynomials. Analytical Geometry: lines and planes in R^n . Functions of several real variables, partial derivatives, directional derivatives, gradient. Multiple integrals.

Numerical Analysis. Error analysis: absolute and relative error; rounding and truncation; floating point systems. Solution of nonlinear equations: bisection, Newton, secant and fixed point methods. Polynomial interpolation and splines. Minimum squares. Numerical integration. Systems of linear equations.

Algorithms and Data Structures II. Representation of data in memory. Data structures. Abstract types of data. Implementation of abstract data types. Pointers. Greedy algorithms. Divide and conquer. Multiple recursion and backtracking. Dynamic programming. Algorithmic complexity.

Elective courses I participated in the RIO 2020 Summer School located at Facultad de Ciencias Exactas, Físico-Químicas, y Naturales (FCEFyN), Universidad Nacional de Río Cuarto, Argentina

Classic and Neural Approaches to Text Mining. Theoretical-practical analysis of unstructured information received in text format that arises from the interaction of Natural Language Processing, Information Retrieval and Machine Learning.

Software Testing. Techniques and concepts of program verification such as fuzzing, symbolic execution, bounded model checking, among others.

Teaching course I participated in the Diplomatura Aprender a Enseñar dictated at the Universidad Nacional de Córdoba

Diplomatura Aprender a enseñar. Training for teaching assistants, and tutors to learn how to carry out their roles effectively at university.

PARTICIPATION IN SEMINARS

Segmentation of Medical Images Using Neural Networks

FaMAF

Organized by the Grupo de Grandes Redes Sociales y Semánticas. Duration: 1,30hs.

Artificial Intelligence in Encrypted Data

FaMAF

Organized by the Grupo de Grandes Redes Sociales y Semánticas. Duration: 1,30hs.

Integrating Interpretability and Efficiency in Early Risk Detection in Social Networks

FaMAF

Organized by the Grupo de Grandes Redes Sociales y Semánticas. Duration: 1,30hs.

Eye-tracking Applications in Visual and Mental Health

FaMAF

Organized by the Grupo de Grandes Redes Sociales y Semánticas. Duration 1,30hs.

The Future of Mobile Development

FCEfYN

RIO 2020 Summer School, Computer Science Department of the FCEfYN. Duration: 2hs.

Machine Learning — Solutions and Applications in Environment Business

FCEfYN

Organized by the enterprise Futit Services in the RIO 2020 Summer School, Computer Science Department of the FCEfYN. Duration: 2hs.

Business Intelligence — Reality and Experience

FCEfYN

Organized by the enterprise Trimix in the RIO 2020 Summer School, Computer Science Department of the FCEfYN. Duration: 2hs.

The Evolution of APIs: GraphQL

FCEfYN

Organized by the enterprise WeDevelop in the RIO 2020 Summer School, Computer Science Department of the FCEfYN. Duration: 2hs.

TEACHING POSITIONS

Teaching Assistant

FaMAF | Mar 2020 - Present

Networks and Distributed Systems. Preparation of extra material that helps students in their study program. Schedule online meetings with groups of students to answer any possible doubts.

Operative Systems. Preparation of extra material that helps students in their study program. Schedule online meetings with groups of students to answer any possible doubts.

Algorithms and Data Structures I. Solutions to didactic and cognitive obstacles that affect student's progression. Assistance with marking and correcting work.

Programming Paradigms. Schedule online meetings with groups of students to answer any possible doubts.

Introductory Course to Enter University. Preparation of online lessons under a stipulated schedule. Online support through chat applications.

Tutor

FaMAF | Sep 2020 - Jun 2021

Preparation of online tutorials for new students to introduce them to university life. Organization of events to provide language coaching through conversation, games, and activities.

Teaching Assistant

Instituto Técnico Superior Córdoba, Argentina | Sep 2020 - May 2021

Software Verification. Help students to prepare for oral examinations and practice their presentation skills.

PROGRAMMING PROJECTS (ARTIFICIAL INTELLIGENCE AND OTHERS)

Categorizing Announcements of the Enterprise Mercado Libre

Developed in the Diplomatura en Ciencia de Datos, Aprendizaje Automático y sus Aplicaciones, FaMAF.

Programming languages and tools used in the project: Python, Keras, Pandas, Scikit-learn, and NLTK.

Duration: 7 months (Ongoing).

Development of a classifier to predict the correct category given the title of an announcement from a dataset provided by the enterprise Mercado Libre for the MeLi Challenge 2019.

Navier Stokes Solver Optimizations

Developed in the Parallel Computing Course of the Licenciatura en Ciencias de la Computación, FaMAF.

Programming languages and tools used in the project: C, C++, Python, CUDA, Intrinsics, and ISPC.

Duration: 6 months.

Application of a fluid dynamic simulation using numerical methods. Implementation of low-level techniques that maximize its performance. Development of Python scripts to pull, record, and produce output metrics.

Personal Blog

Extracurricular activity

Programming languages and tools used in the project: ReactJS, GatsbyJS, and Javascript.

Duration: 3 months.

Personal blog where I share my experiences, thoughts, and tutorials.

Price Estimation of Properties in Melbourne

Developed in the Data Visualization Course of the Diplomatura en Ciencia de Datos, Aprendizaje Automático y sus Aplicaciones, FaMAF.

Programming languages and tools used in the project: Python, and Pandas.

Duration: 2 months.

Exploration and data curation of a dataset given by a Kaggle competition related to properties that were sold in

Melbourne, Australia, between 2016 and 2017. Preparation of a well-structured matrix in order to use supervised learning models to estimate their prices.

Predictive and Generative Models for Neural Networks

Developed in the Neural Networks Course of the Licenciatura en Ciencias de la Computación, FaMAF.

Programming languages and tools used in the project: Python, and Pytorch.

Duration: 2 months.

Analysis of the Lotka Volterra model that predicts a predator-prey environment and how two species interact.

Implementation of the Integrate and Fire equations that models neural electric pulses to transmit information.

Development and analysis of variational autoencoders which are neural networks for processing and generating images through an input sample and a defined model.

Simulation of an ATM Queuing System

Developed in the Models and Simulation Course of the Licenciatura en Ciencias de la Computación, FaMAF.

Programming languages and tools used in the project: Python.

Duration: 1 month.

Implementation of a stochastic simulation of discrete events for arrival of customers to an ATM queuing system.

Recording and plotting of simulation results.

RESEARCH EXPERIENCE

Using Word Embeddings for Heuristic Grounding in Classical Planning

FaMAF | Jul 2021 - Present

Supervisors: Dr. M. Dominguez y Dr. C. Areces, FaMAF

Use of unsupervised and supervised techniques in AI Planning algorithms in order to improve their overall performance using fast machine learning models such as Logistic Regression, XGBoost, and Support Vector Machines.

COMMUNITY SERVICE

Technological Assistance to Vulnerable Sectors

FaMAF Apr 2021 - Present

Reconditioning and installation of necessary software on computers, laptops, and tablets, so they could be donated to children, youth, and adults with difficulties in accessing technological resources.

EXTRACURRICULAR ACTIVITIES

RIO 2020 Summer Camp

FCEfyN | Feb 2020

Summer camp located at Universidad Nacional de Río Cuarto to participate in Computer Science courses, seminars, and

extracurricular activities.

Argentinian Programming Contest

ACM International Collegiate Programming Contest | Sep 2019

Competition in groups of three members where I represented the FaMAF to solve a set of algorithmic problems in the shortest possible time.

Training Camp Argentina

FaMAF | Jul 2019

Training to develop problem-solving skills in programming competitions.

Science Camp: Expedición Ciencia

Neuquén, Argentina | Feb 2016

Vocational camp in order to get a first approach to exploration and scientific thinking.

Music Composition Course: Trayecto Artístico Profesional

Salta, Argentina | Mar 2012 - Dec 2014

Escuela Superior de Música de la Provincia de Salta N° 6003 José Lo Giúdice

OTHER SKILLS

Languages:		Reads	Speaks	Writes
	Spanish (Mother tongue)	Very Well	Very Well	Very Well
	English	Very Well	Well	Well

Programming: Python, Scala, C, C++, Javascript, Java, Haskell.

Technologies: Git, Pandas, NLTK, Sklearn, Pytorch, Keras, SQL, MongoDB, \LaTeX , CUDA, Intrinsics, OpenMP, ISPC, ReactJS, GatsbyJS.

Hobbies: Yoga, weightlifting, salsa and bachata dancing classes, guitar player.