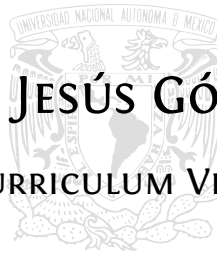




# UZMAR DE JESÚS GÓMEZ YÁÑEZ

## CURRICULUM VITAE



FIRST TWO PAGES ARE THE MOST IMPORTANT ONES

### PERSONAL STATEMENT

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I learned to program throughout my career in Physics, mainly in topics of numerical analysis. However, I discovered areas such as deep learning and data analysis that soon caught my interest, so I decided to pursue a master's degree in computer science in the near future. I know how to use GNU / Linux systems and I have knowledge of several programming languages such as Python and C++. I have worked both in the academic field but also as a Machine Learning Engineer/Data Scientist, and I have a deep understanding on algorithms and data structures.

### PERSONAL DATA

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LINKEDIN: [www.linkedin.com/in/uzmargomez](https://www.linkedin.com/in/uzmargomez)  
GITHUB: <https://github.com/uzmargomez>  
HACKERRANK: [https://www.hackerrank.com/uzmar\\_gomez](https://www.hackerrank.com/uzmar_gomez)  
IMPORTANT DOCUMENTS: [Dropbox Carpet](#)

### EDUCATION

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#### Physics

2018	<b>Bachelor of Science in PHYSICS</b> , Faculty of Science, National Autonomous University of Mexico (UNAM), Mexico City, Mexico.
2011	<b>Thesis: "Numerical Study of Vlasov Equation in the Schwarzschild Metric"</b> Description: We used a finite differences scheme that evolves the relativistic Vlasov equation on a background black hole metric, assuming this is an advective equation, with velocities dependent both on time and position. Advisor: Dr. Miguel Alcubierre
	OVERALL SCORE: 9.37/10 <a href="#">  Detailed List of Grades</a>

#### Computer Science

2010	<b>Technical Career in COMPUTER SCIENCE</b> , ENP N° 7 National Autonomous University of Mexico (UNAM), Mexico City, Mexico.
2008	OVERALL SCORE: 9.1/10 <a href="#">  Detailed List of Grades</a>

### COMPUTER SKILLS

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Programming Languages	Python, C/C++, Fortran, Julia, Go
Machine/Deep Learning	TensorFlow, Keras, PyTorch, Time Series analysis (Facebook Prophet), LDA, PCA, Recommendation systems, Classification problems
Databases	MySQL, MongoDB
Containers	Docker, Kubernetes
Operating System	Debian GNU/Linux, Ubuntu GNU/Linux, Windows
Web Backend	Flask
Web Frontend	HTML, Bootstrap
Version Control	Git
Parallel Computing	CUDA C/C++, CUDA Python
Data Visualization	Tableau

### LANGUAGES

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ENGLISH: B2 Level, IELTS (2018)  
SPANISH: Mother tongue

## INTERESTS AND ACTIVITIES

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### *Academic*

Data Science, Machine Learning, Deep Learning, Numerical Analysis, Competitive Programming, General Relativity, Numerical Relativity, Gravitational Waves, Black Holes, Quantum Mechanics, Computer Science, Electromagnetism.

### *Non academic*

Running, Swimming, Playing the Guitar, Science Fiction and Fantasy Reading, Traveling, Videogames.

## EXPERIENCE

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### *Short Description*

**Dec 2019 - Present.** I have been working on a face recognition system using a method called Sparse Representation alongside with Neural Networks. I have acquired a deep understanding of Neural Networks for Face Detection and Recognition, Image Classification, Language Processing, among others. Also, I have some experienced in Data Visualization using Tableau.

**Sep 2019 - Dec 2019.** Data Scientist Trainee at Softtek. I learned about different statistical and machine learning techniques, as well as algorithms, to study a wide range of problems.

**2012 - 2019.** Throughout my career I have programmed, mainly in Python and C ++, but also in Julia, Matlab, etc., for different purposes, such as carrying out tasks and projects (in particular in the subjects of Computational Physics and Selected Topics of Computational Physics). As mentioned below, I have taught Computer Science classes, in which the Python programming language was introduced to Physics students.

**2014 - 2015.** I helped in the administration of the Mechanical Laboratory of the Faculty of Engineering database, at the UNAM, solely with the objective of learning. SQL was used for this purpose.

**Sep 2018 - Dec 2019.** Regarding research, I have experience using the Einstein Toolkit, this being a platform of software tools created with the aim of advancing and supporting research in relativistic astrophysics and gravitational physics. It allows the study of topics such as the collision of black holes, relativistic hydrodynamics, etc. This tool, although based on C ++ and Fortran, uses Python as an assembler of the different pieces.

Related to the subjects I have taught:

- Computer Science.  
<https://web.fciencias.unam.mx/assignaturas/102.pdf>
- Selected Topics in Relativity, Cosmology and Gravitation 1.  
<https://web.fciencias.unam.mx/docencia/horarios/presentacion/295997>
- Relativity  
<https://web.fciencias.unam.mx/assignaturas/718.pdf>
- Mathematics I for Applied Sciences.  
<http://www.fciencias.unam.mx/assignaturas/1118.pdf>
- Mathematics II for Applied Sciences.  
<http://www.fciencias.unam.mx/assignaturas/1216.pdf>

### *Technical*

DEC 2019		Data Scientist Trainee at SOFTTEK
SEP 2019		Mexico City, Mexico.

SEP 2009		Computer Technician at GENERAL DIRECTION OF COMMUNITY SERVICES
JUN 2009		Mexico City, Mexico.

## Vocational

Semester 2019-2	Teacher Assistant B at FACULTY OF SCIENCE, UNAM Mexico City, Mexico. ◦ Mathematics II for Applied Sciences	MSc. Alejandro Villarreal
Semester 2019-1	Teacher Assistant B at FACULTY OF SCIENCE, UNAM Mexico City, Mexico. ◦ Selected Topics in Relativity, Cosmology and Gravitation I ◦ Mathematics I for Applied Sciences	Dr. Miguel Alcubierre   MSc. Alejandro Villarreal
Semester 2018-2	Teacher Assistant B at FACULTY OF SCIENCE, UNAM Mexico City, Mexico. ◦ Relativity ◦ Mathematics II for Applied Sciences	Dr. Miguel Alcubierre   MSc. Alejandro Villarreal
Semester 2018-1	Teacher Assistant B at FACULTY OF SCIENCE, UNAM Mexico City, Mexico. ◦ Relativity ◦ Mathematics I for Applied Sciences	Dr. Miguel Alcubierre   MSc. Alejandro Villarreal
Semester 2017-2	Teacher Assistant A at FACULTY OF SCIENCE, UNAM Mexico City, Mexico. ◦ Mathematics II for Applied Sciences	MSc. Alejandro Villarreal
Semester 2017-1	Teacher Assistant A at FACULTY OF SCIENCE, UNAM Mexico City, Mexico. ◦ Mathematics I for Applied Sciences ◦ Computer Science	MSc. Alejandro Villarreal   MSc. Alejandro Villarreal
JUN 2017	Teacher at COORDINATION OF PROGRAMS OF DIFFERENTIATED ATTENTION FOR STUDENTS, FACULTY OF ENGINEERING, UNAM Mexico City, Mexico. ◦ Electrodynamics with an introduction to special relativity	Eng. Raúl Puente
Semester 2016-1	Teacher Assistant A at FACULTY OF SCIENCE, UNAM Mexico City, Mexico. ◦ Mathematics I for Applied Sciences	MSc. Alejandro Villarreal

## CONFERENCES, COURSES, SCHOOLS AND WORKSHOPS ATTENDED

### Computer Science Related

MAR 26, 2020 AGO 04, 2019	<b>Specialization.</b> <i>Accelerated Computer Science Fundamentals</i> (COURSERA) University of Illinois at Urbana-Champaign <a href="https://www.coursera.org/account/accomplishments/specialization/certificate/DRF2CVM7P7FB">https://www.coursera.org/account/accomplishments/specialization/certificate/DRF2CVM7P7FB</a>
MAR 26, 2020 SEP 15, 2019	<b>Course.</b> <i>Unordered Data Structures</i> (COURSERA) University of Illinois at Urbana-Champaign <a href="https://www.coursera.org/account/accomplishments/certificate/DFHE5FBHVAAD">https://www.coursera.org/account/accomplishments/certificate/DFHE5FBHVAAD</a>
MAR 04, 2020 FEB 10, 2020	<b>Course.</b> <i>Python Statistics for Data Science Course</i> (EDUREKA) Edureka! For Business <a href="https://www.edureka.co/lms/certificate/8a0976c4e21d5bee00ff053e2d8e3f3e">https://www.edureka.co/lms/certificate/8a0976c4e21d5bee00ff053e2d8e3f3e</a>
SEP 15, 2019 AGO 11, 2019	<b>Course.</b> <i>Ordered Data Structures</i> (COURSERA) University of Illinois at Urbana-Champaign <a href="https://www.coursera.org/account/accomplishments/certificate/PZ9NABHA7XBY">https://www.coursera.org/account/accomplishments/certificate/PZ9NABHA7XBY</a>

AGO 11, 2019	<b>Course.</b> <i>Object-Oriented Data Structures in C++</i> (COURSERA)
AGO 04, 2019	University of Illinois at Urbana-Champaign <a href="https://www.coursera.org/account/accomplishments/certificate/2YKURK8TJJ5B">https://www.coursera.org/account/accomplishments/certificate/2YKURK8TJJ5B</a>
JUL 29, 2019	<b>Course.</b> <i>Algorithmic Toolbox</i> (COURSERA)
JUN 02, 2019	University of California San Diego, National Research University Higher School of Economics <a href="https://www.coursera.org/account/accomplishments/certificate/FBZ5SK3E9BB6">https://www.coursera.org/account/accomplishments/certificate/FBZ5SK3E9BB6</a>
APR 17, 2019	<b>Course.</b> <i>Operating Systems and You: Becoming a Power User</i> (COURSERA)
APR 03, 2019	Grow with Google, Mexico City, Mexico. <a href="https://www.coursera.org/account/accomplishments/certificate/V6STDES4HLPE">https://www.coursera.org/account/accomplishments/certificate/V6STDES4HLPE</a>
MAR 10, 2019	<b>Course.</b> <i>Python Data Structures</i> (COURSERA)
MAR 08, 2019	University of Michigan, Michigan, United States. <a href="https://www.coursera.org/account/accomplishments/certificate/L6Y7MZQDAJHP">https://www.coursera.org/account/accomplishments/certificate/L6Y7MZQDAJHP</a>
FEB 26, 2019	<b>Course.</b> <i>Programming for Everybody (Getting Started with Python)</i> (COURSERA)
FEB 21, 2019	University of Michigan, Michigan, United States. <a href="https://www.coursera.org/account/accomplishments/certificate/CNNYCJB5YB46">https://www.coursera.org/account/accomplishments/certificate/CNNYCJB5YB46</a>
FEB 14, 2019	<b>Course.</b> <i>Technical Support Fundamentals</i> (COURSERA)
FEB 03, 2019	Grow with Google, Mexico City, Mexico. <a href="https://www.coursera.org/account/accomplishments/certificate/YQRPQLC86CUM">https://www.coursera.org/account/accomplishments/certificate/YQRPQLC86CUM</a>
FEB 5, 2019	<b>Course.</b> <i>Introduction to Data Science: Statistical Programming with R</i> (COURSERA)
FEB 3, 2019	National Autonomous University of Mexico, Mexico City, Mexico. <a href="https://www.coursera.org/account/accomplishments/certificate/E75DVAG2956T">https://www.coursera.org/account/accomplishments/certificate/E75DVAG2956T</a>
JUN 13, 2018	<b>School.</b> <i>Deep Learning and Multimessenger Astronomy</i>
JUN 9, 2018	Tecnológico de Monterrey, Guadalajara, Mexico.
JAN 27, 2017	<b>Course.</b> <i>Basic Linux</i>
JAN 16, 2017	Faculty of Engineering UNAM, Mexico City, Mexico.
JUL 01, 2016	<b>Course.</b> <i>Fortran Fundamentals</i>
JUN 20, 2016	Faculty of Engineering UNAM, Mexico City, Mexico.

### *Physics Related*

NOV 11, 2018	<b>School.</b> <i>Third Meeting of the Thematic Network of Black Holes and Gravitational Waves.</i>
NOV 9, 2018	Playa del Carmen, Quintana Roo, Mexico.
NOV 9, 2018	<b>School.</b> <i>Third School of Relativity and Gravitational Waves. XII School of the Division of Gravitation and Mathematical Physics.</i>
NOV 5, 2018	Playa del Carmen, Quintana Roo, Mexico.
AUG 12, 2017	<b>Workshop.</b> <i>Fifth Gravitation and Cosmology Workshop.</i>
AUG 10, 2017	Institute of Physical Sciences UNAM, Cuernavaca, Mexico.
AUG 9, 2017	<b>School.</b> <i>Second School of Relativity and Gravitational Waves.</i>
AUG 7, 2017	Institute of Physical Sciences UNAM, Cuernavaca, Mexico.
JAN 18, 2016	<b>Course.</b> <i>Introduction to Relativistic Electrodynamics</i>
JAN 7, 2016	Faculty of Engineering UNAM, Mexico City, Mexico.

## PROFESSIONAL MEMBERSHIP

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SEP 2019	Fellow
JAN 2017	Thematic Network of Black Holes and Gravitational Waves (Red ANYOG, CONACYT).
DEC 2019	Student Associate
JAN 2016	Institute of Nuclear Sciences, UNAM.
JAN 2016	Student Associate
JAN 2015	Institute of Physics, UNAM.

## VOLUNTEER ACTIVITIES

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SEP 2019	Teacher
MAR 2019	University Student Council (CEU México) Provide university students with tools to help develop their academic, professional and personal skills, in order to facilitate their employment and the definition of their life project.
MAR 2019	Volunteer
SEP 2018	Adopt a Talent Program (PAUTA) Encourage scientific vocations so that those children and adolescents who like science, as well as those with outstanding skills, find a space where they can share their interest and develop skills that allow them to strengthen their scientific vocation.

## PRESENTATIONS AND POSTER SESSIONS

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OCT 11, 2017	Poster Presentation at LX NATIONAL CONGRESS OF PHYSICS. Monterrey, Mexico I presented a poster about my undergraduate thesis "Numerical Study of Vlasov Equation in the Schwarzschild Metric".
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## SCHOLARSHIPS, AWARDS, HONORS AND ACCOMPLISHMENTS

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2017	Scholarship awarded for Conclusion of Project
2016	Support Program for Research Projects and Technological Innovation (PAPIIT).
2016	Scholarship awarded for Conclusion of Undergraduate School
2015	Support Program for Research Projects and Technological Innovation (PAPIIT).

## REFERENCES

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NAME:	Dr. Fernando José Herrera Elizalde
INSTITUTION NAME:	Softtek, Mexico
OCCUPATION:	Senior Data Scientist
EMAIL:	<a href="mailto:fernandoj.herrera@softtek.com">fernandoj.herrera@softtek.com</a>
NAME:	Dr. Alejandro Villarreal
INSTITUTION NAME:	Faculty of Science, UNAM.
OCCUPATION:	Researcher, Teacher
EMAIL:	<a href="mailto:alejandro.v@ciencias.unam.mx">alejandro.v@ciencias.unam.mx</a>
NAME:	Dr. Miguel Alcubierre
INSTITUTION NAME:	Institute of Nuclear Sciences, UNAM.
OCCUPATION:	Director, Researcher, Teacher
EMAIL:	<a href="mailto:malcubi@nucleares.unam.mx">malcubi@nucleares.unam.mx</a>

UPDATED ON APRIL 26, 2020

# Bachelor of Science in PHYSICS

## National Autonomous University of Mexico (UNAM)

### Grades

COURSE	GRADE	CREDITS
Differential and Integral Calculus I	07	18
Algebra	10	10
Computer Science	10	6
Analytic Geometry I	08	10
Differential and Integral Calculus II	10	18
Contemporary Physics	09	6
Vector Mechanics	9	12
Analytic Geometry II	09	10
Mechanics Laboratory	10	6
Collective Phenomena	10	12
Collective Phenomena Laboratory	09	6
Linear Algebra I	10	10
Differential Equations I	08	10
Optics	09	12
Linear Algebra II	10	10
Differential and Integral Calculus III	07	18
Electromagnetism I	9	12
Electromagnetism Laboratory	10	6
Tensor Calculus	9	10
Differential and Integral Calculus IV	07	18
Introduction to Quantum Physics	10	12
Optics Laboratory	10	6
Thermodynamics	09	12
Advanced Mathematics of Physics	10	10
Computational Physics	10	12
Quantum Mechanics	09	12
Complex Variable I	10	10
Selected Topics of Mathematics and Theoretical Physics	10	6
Electromagnetism II	08	12
Electronics Laboratory	10	6
Statistical Physics	10	12
Contemporary Physics Laboratory I	10	6
Complex Variable II	10	10
Analytical Mechanics	10	12
Relativity	09	06
Introduction to Elementary Particle Physics I	10	06
Dynamics of Deformable Bodies	10	12
Atomic Physics and Condensed Matter	09	06
Nuclear and Subnuclear Physics	09	06
Contemporary Physics Laboratory II	10	06
Topology and Differential Geometry for Physics	10	06
Selected Topics of Relativity, Cosmology and Gravitation I	10	06
Selected Topics of Computational Physics I	10	06
English Language	AC	00
Total Credits		418
OVERALL SCORE		9.37

**Technical Career in COMPUTER SCIENCE**  
**National Autonomous University of Mexico (UNAM)**  
**Grades**

COURSE	GRADE
Introduction to Computer Science	9
Operating Systems	10
General Use Applications	9
Problem Solving and Programming Techniques	9
Structured Programming	10
Event-Oriented Programming	9
Systems Analysis and Design	10
Database-Oriented Programming	6
Local Area Networks	9
Preventive Maintenance and Minor Corrections for PC's	10
OVERALL SCORE	9.1