# Jorge Alejandro Preciado-López

in linkedin.com/in/alexpreciado

## SKILLS

Machine Learning and Data Engineering Manager at HelloFresh Canada with 6+ years of experience developing predictive models, data pipelines, and software for industry and international scientific collaborations. Core developer of the software used to model the [first image of a black hole](#) obtained by the Event Horizon Telescope Collaboration.

**Programming.** Python, shell scripting. Previous experience with C++ and Fortran.
**Tools.** AWS, Databricks, Version control (GitHub), Presto, Vault Enterprise, Airflow, Tableau.
**Databases.** MySQL, Redshift, Postgres databases. Cloudera Impala Data Warehouses
**High Performance Computing.** 2.5 years of experience developing parallelized software with MPI in HPC systems.

## EXPERIENCE

**Manager, Machine Learning & Data Engineering**                                       Aug 2021 – Present
*HelloFresh Canada*

- Leading a team of 5 Data Engineers to support business partners across all areas of the business (Demand Planning, Procurement, Production, Marketing, Product, Finance, HR).
- Coordinating the development of data products and data ingestion pipelines to support decision making and automation of business-critical processes.
- Coordinating the development of software for demand planning, production scheduling and inventory management for new ready-to-eat/ready-to-heat brand in Canada (Factor).
- Leading the onboarding and implementation of new data infrastructure for the Canadian Data Team (Databricks, AWS, Airflow, Presto, Vault Enterprise, etc.).
- Management of local Operational Database (Menu, Recipe, Supplier, Ingredient, QA, Inventory data).

**Data Scientist**                                       Aug 2019 – July 2021
*HelloFresh Canada*

- Competitor Analyses & Market Share Models using 3rd party (credit card and website traffic) data. Insights used by local/global SLT & Investors Relations team.
- Customer 360. Lead the creation of customer-level datasets used for RFM analyses, customer segmentation and to feed ML models to identify high/mid/low-value customers.
- Support Demand forecasting efforts to support aggressive add-on offer expansion during COVID-19 crisis.
- Member of the Data Literacy, Data Governance & Data Infrastructure working groups. Local Data Literacy Program coordinator (Developed local/global up-skilling frameworks). Data Literacy Campaign organizer.

**Postdoctoral Researcher**                                       Nov 2016 – Jan 2019
*Perimeter Institute & Event Horizon Telescope (EHT) Collaboration*

- Successfully captured the first-ever image of a black hole with a global team of researchers.
- Leaded the development of parameter estimation frameworks (software) to analyze astrophysical data.
- Devised and coded parametrized models to estimate black hole parameters.
- Validated and tested analytical/numerical models using High-Performance Computing (HPC) systems.

## EDUCATION

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| **PhD, Physics** | University of Guanajuato (Mexico) | 2010 - 2015 |
| **Masters, Physics** | University of Guanajuato (Mexico) | 2008 - 2010 |
| **B. Eng., Electrical Engineering** | University of Guanajuato (Mexico) | 2002 - 2008 |

## AWARDS & ACHIEVEMENTS

- **Albert Einstein Medal,** for the 1st image of a supermassive black hole (May 2020).
- **2020 Breakthrough Prize in Fundamental Physics,** for the 1st image of a supermassive black hole (Nov 2019).
- **Diamond Achievement Award of the National Science Foundation**. Presented to the team of researchers who captured the first-ever image of a black hole (May 2019).

- **Bronze Medal**, VII Iberoamerican Physics Olympiads (2002).
- **Gold Medal,** XII National Physics Olympiads (Mexico 2001).

## MAIN PUBLICATIONS

Quantum Cosmology and Alternative Gravity Theories:
- Well-posed Cauchy formulation for Einstein-æther theory, *Classical and Quantum Gravity,* 36 (2019), No. 16.
- Quantum cosmology in Hořava-Lifshitz gravity, Phys Rev. D 86, 063502 (2012).
- A quantum cosmological model in Hořava-Lifshitz gravity, AIP Conference Proceedings 1396, 151 (2011).

Publications with the Event Horizon Telescope Collaboration:

- THEMIS: A Parameter Estimation Framework for the Event Horizon Telescope, *ApJ Letters*, 897 (2020) 139.
- Spacetime Tomography Using the Event Horizon Telescope, *ApJ Letters,* 892 (2020) 132.
- The EHT General Relativistic Magnetohydrodynamic Code Comparison Project, *ApJS*, 243 (2019) 26.

First Sgr A* EHT Results (The First Image of the Black Hole in the Center of our Galaxy):

- I. The Shadow of the Supermassive Black Hole in the Center of the Milky Way, *ApJ Letters*, 930 (2022) L12.
- II. EHT and Multiwavelength Observations, Data Processing, and Calibration, *ApJ Letters*, 930 (2022) L13.
- III. Imaging of the Galactic Center Supermassive Black Hole, *ApJ Letters*, 930 (2022) L14.
- IV. Variability, Morphology, and Black Hole Mass, *ApJ Letters*, 930 (2022) L15.
- V. Testing Astrophysical Models of the Galactic Center Black Hole, *ApJ Letters*, 930 (2022) L16.
- VI. Testing the Black Hole Metric, *ApJ Letters*, 930 (2022) L17.

First M87 EHT Results (The First Image of the Black Hole in the Center of the M87 Galaxy):

- I. The Shadow of the Supermassive Black Hole, *ApJ Letters,* 875 (2019) L1.
- II. Array and Instrumentation, *ApJ Letters,* 875 (2019) L2.
- III. Data Processing and Calibration, *ApJ Letters,* 875 (2019) L3.
- IV. Imaging the Central Supermassive Black Hole, *ApJ Letters,* 875 (2019) L4.
- V. Physical Origin of the Asymmetric Ring, *ApJ Letters,* 875 (2019) L5.
- VI. The Shadow and Mass of the Central Black Hole, *ApJ Letters*, 875 (2019) L6.
- VII. Polarizaton of the Ring, *ApJ Letters,* 910 (2021) L12.
- VIII. Magnetic Field Structure near The Event Horizon, *ApJ Letters,* 910 (2021) L13.

A full List of publications can be found here.