Jorge Alejandro Preciado-López

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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 Machine Learning models to identify high/mid/low-value customers.
- Demand forecasting models to support aggressive add-on offer expansion during COVID-19 pandemic.
- 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

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 in INSPIRE (here) and Google Scholar (here).