**Jorge Alejandro Preciado-López**

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|  | linkedin.com/in/alexpreciado |  | github.com/alex-preciado |

**SKILLS**

5+ years of experience developing predictive models and software for industry and international scientific collaborations. Core developer of the software used to study the [first image of a black hole](https://www.nytimes.com/2019/04/10/science/black-hole-picture.html) obtained by the Event Horizon Telescope.

**Programming.** Python, C++, SQL, shell scripting. Familiar with HTML/CSS and Fortran.

**Tools.** AWS, Databricks. Version control (Git), Airflow.

**Databases.** Impala Data Warehouses and Experience with MySQL, Redshift, Postgres, and NoSQL databases.

**High Performance Computing.** 2.5 years of experience developing parallelized software with MPI in HPC systems.

**Teaching.** 7 years of teaching experience. Trained medal winners of several Physics competitions and Olympiads.

**EXPERIENCE**

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| **Manager, Machine Learning & Data Engineering** | Jan 2022 – Present |
| *HelloFresh (Toronto, Canada)* |  |
| * Building the Data, Machine Learning and Software Engineering functions of the Data Team * Data pipelines, ETL Design & Implementation * Database Maintenance * Infrastructure & Tooling for Machine Learning models in Production | |
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| **Data Scientist** | Aug 2019 – Dec 2021 |
| *HelloFresh (Toronto, Canada)* |  |
| * Supported demand Forecasting efforts during COVID-19 crisis. * Built predictive models to guide new product development. * Implemented Machine Learning models to improve customer retention. * Experience working with data to track customer behaviour and improve product performance. | |
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| **Postdoctoral Researcher** | Nov 2016 – Jan 2019 |
| *Perimeter Institute for Theoretical Physics (Waterloo, Canada)*  *Event Horizon Telescope (EHT) Collaboration* |  |
| * Captured the first-ever image of a black hole with a global collaboration of 200+ members. * Develop parameter estimation frameworks (software) to analyze astrophysical data. * Devise and code parametrized models used by the EHT to estimate black hole parameters. * Validate and test analytical/numerical models using High-Performance Computing (HPC) systems. | |
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**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 first image of a supermassive black hole (May 2020).
* **The 2020 Breakthrough Prize in Fundamental Physics,** for the first 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** in the VII Iberoamerican Physics Olympiads (2002).
* **Gold medal** in the XII National Physics Olympiads (Mexico 2001).
* Graduate Researcher with best academic record of the PhD and MSc in Physics programs.

**MAIN PUBLICATIONS**

With the Event Horizon Telescope (EHT) Collaboration et al in The Astrophysical Journal (ApJ):

* First M87 EHT Results. [I. The Shadow of the Supermassive Black Hole](https://iopscience.iop.org/article/10.3847/2041-8213/ab0ec7), ApJ Letters, 875 (2019) L1.
* First M87 EHT Results. [II. Array and Instrumentation](https://iopscience.iop.org/article/10.3847/2041-8213/ab0c96), ApJ Letters, 875 (2019) L2.
* First M87 EHT Results. [III. Data Processing and Calibration](https://iopscience.iop.org/article/10.3847/2041-8213/ab0c57), ApJ Letters, 875 (2019) L3.
* First M87 EHT Results. [IV. Imaging the Central Supermassive Black Hole](https://iopscience.iop.org/article/10.3847/2041-8213/ab0e85), ApJ Letters, 875 (2019) L4.
* First M87 EHT Results. [V. Physical Origin of the Asymmetric Ring](https://iopscience.iop.org/article/10.3847/2041-8213/ab0f43), ApJ Letters, 875 (2019) L5.
* First M87 EHT Results [VI. The Shadow and Mass of the Central Black Hole](https://iopscience.iop.org/article/10.3847/2041-8213/ab1141), *ApJ Letters*, 875 (2019) L6.
* First M87 EHT Results [VII. Polarizaton of the Ring](https://iopscience.iop.org/article/10.3847/2041-8213/abe71d), *ApJ Letters*, 910 (2021) L12.
* First M87 EHT Results [VII. Magnetic Field Structure near The Event Horizon](https://iopscience.iop.org/article/10.3847/2041-8213/abe4de), *ApJ Letters*, 910 (2021) L13.
* [The EHT General Relativistic Magnetohydrodynamic Code Comparison Project](https://arxiv.org/pdf/1904.04923.pdf), *ApJS*, 243 (2019) 26*.*
* [THEMIS: A Parameter Estimation Framework for the Event Horizon Telescope](https://iopscience.iop.org/article/10.3847/1538-4357/ab91a4), *ApJ Letters*, 897 (2020) 139.
* [Spacetime Tomography Using the Event Horizon Telescope](https://iopscience.iop.org/article/10.3847/1538-4357/ab744c), *ApJ Letters*, 892 (2020) 132.

Other publications:

* [Well-posed Cauchy formulation for Einstein-æther theory](https://arxiv.org/abs/1902.05130),  *Classical and Quantum Gravity,* 36 (2019), No. 16.
* [Quantum cosmology in Hořava-Lifshitz gravity](https://journals.aps.org/prd/abstract/10.1103/PhysRevD.86.063502), Phys Rev. D 86, 063502 (2012).
* [A quantum cosmological model in Hořava‐Lifshitz gravity](https://aip.scitation.org/doi/abs/10.1063/1.3647539), AIP Conference Proceedings 1396, 151 (2011).