Jorge Alejandro Preciado-López

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 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

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

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.

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.

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 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, *ApJ Letters,* 875 (2019) L1.
- First M87 EHT Results. II. Array and Instrumentation, *ApJ Letters,* 875 (2019) L2.
- First M87 EHT Results. III. Data Processing and Calibration, *ApJ Letters,* 875 (2019) L3.
- First M87 EHT Results. IV. Imaging the Central Supermassive Black Hole, *ApJ Letters,* 875 (2019) L4.
- First M87 EHT Results. V. Physical Origin of the Asymmetric Ring, *ApJ Letters,* 875 (2019) L5.
- First M87 EHT Results VI. The Shadow and Mass of the Central Black Hole, *ApJ Letters*, 875 (2019) L6.
- First M87 EHT Results VII. Polarizaton of the Ring, *ApJ Letters*, 910 (2021) L12.
- First M87 EHT Results VII. Magnetic Field Structure near The Event Horizon, *ApJ Letters*, 910 (2021) L13.
- The EHT General Relativistic Magnetohydrodynamic Code Comparison Project, *ApJS*, 243 (2019) 26.
- 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.

Other publications:

- 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).