

# Matthew Napaaqtuk Kancewick Smith

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## WORK EXPERIENCE

**City of Boston** – Department of Innovation and Technology Boston, MA  
*Principal Data Scientist* October 2018 – present

- Leading a cross-department team in a wide range of data-driven projects from restaurant inspections to homeless shelter reform to 311 service requests
- Developing deep analysis and predictive modeling techniques to assist city departments with research, operations, and data-driven solutions.
- Creating city data visualization and storytelling

**Oceana** (Global ocean conservation NGO) – Europe Office Madrid, Spain  
*Data Scientist* May 2017 – September 2018

- Predictive modeling of fishing inside EU marine protected areas through application of big data techniques, machine learning, and statistical methods from particle physics
- Developed data-driven techniques to support Oceana’s campaign to stop illegal fishing
- Analyzed the potential economic impact of curbing overfishing in the EU (+€4.9bn, +92k jobs)

**CERN** (European Organization for Nuclear Research) – **ATLAS Detector** Geneva, Switzerland  
*PhD Researcher* June 2013 – May 2014, February 2015 – December 2016

- Created and managed very large (~200 TB) datasets containing particle collision and decay information
- Developed a data-driven model to test particle collisions for the existence of supersymmetry using clustering algorithms to identify and target the output with greatest potential for discovery

**Columbia University** New York, NY  
*Teaching Fellow* September 2011 – May 2013

- Weekly group lab, problem-solving sections, individual math and physics tutoring
- Only graduate student (out of ~50) selected to teach advanced engineering laboratory

## EDUCATION

**Columbia University** New York, NY  
PhD in Particle Physics May 2017  
Thesis: “Searching for SUSY phenomena in final states with high jet multiplicity at the ATLAS detector”

**Perimeter Institute for Theoretical Physics** Waterloo, Ontario  
Perimeter Scholars International Fellow; MSci in Theoretical Physics University of Waterloo June 2011

**Yale University** New Haven, CT  
B.S. in Physics, Honors track (Intensive Physics) May 2010

## HONORS & AWARDS

National Science Foundation Grant (2013-2016)

Perimeter Scholars International Fellowship (2010-2011)

Yale Deforest Pioneers Prize “for distinguished creative achievement in physics” (2010)

Yale Society of Physics Students, President (2009-2010)

## SELECTED PUBLICATIONS

ATLAS Collaboration, *Search for new phenomena in final states with large jet multiplicities and missing transverse momentum with ATLAS using  $\sqrt{s} = 13$  TeV proton–proton collisions*, **Phys. Lett. B** 757 (2016) 334.

ATLAS Collaboration, *Performance of pile-up mitigation techniques for jets in pp collisions at  $\sqrt{s} = 8$  TeV using the ATLAS detector*, **Eur. Phys. J. C** (2016) 76:581.

## SKILLS

**Languages:** English (native), Spanish (fluent), French (basic).

**Coding:** Python (esp. pandas, scikitlearn, data science packages), C++, LaTeX, proficient with SQL, R, MatLab.

## EXTRACURRICULAR ACTIVITIES

**Violin/Fiddle:** Lifelong musician, performing solo and in ensembles in many styles (most recently the UN Orchestra and the Geneva Irish trad band “The Emigrants”), as well as teaching violin and improvisation.

**Ultimate Frisbee:** 10 years of club-level competition the US, Canada, and Europe. Competed in the 2016 World Championships in London with the Swiss national team.